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SYMMETRICAL SWELLING OF BOTH UPPER EYE-LIDS, RESEMBLING ŒDEMA, BUT DEPENDING ON A PROTRUSION OF THE ORBITAL FAT, NEAR THE LACHRYMAL GLAND.

By WILLIAM BOWMAN, Esq., F.R.S., Professor of Physiology, and General and Morbid Anatomy, in King's College, London; Assistant Surgeon to the King's College Hospital, and to the Royal London Ophthalmic Hospital, Moorfields.

THE following case excited some interest among those who saw its progress; and is published for the sake of whatever light it may throw on others of a similar character.

Henry John B., ætat. 16, a very healthy-looking boy, of ruddy complexion, reddish hair, son of a publican at Islington, came to the Ophthalmic Hospital, Moorfields, in February 1848, for a swelling of both upper eye-lids, which made his friends and himself uneasy by its unsightly appearance, though he had experienced no pain. The swelling was precisely alike on the two sides. It was almost limited to the outer half, or outer two-thirds of the lid, extending from the brow to within a sixteenth of an inch of the tarsal border, where it ceased by a groove, over which the relaxed and distended integument hung, as was very evident when the lid was viewed in profile. The swelling was reddish in the middle part, from fulness of the cutaneous vessels. It was quite soft, as if from œdema of the parts subjacent to the skin; and when pressed by the finger, no resistance was encountered, nor was any indentation left. The skin was thin, and slipped freely over the orbicularis muscle, nor was it easy to seize between the finger and thumb a fold of this muscular layer. When this was done, however, the feeling was that of redundant and loose cellular tissue beneath, and not of any tumour. Eversion of the lid showed the conjunctiva and subjacent tissue to be perfectly natural. Pressure behind the external angular process detected no tumour. The globe was in all respects healthy. Careful inquiry as to his general functions, only served to show that he was in excellent health.

He stated, that this swelling had come on gradually, on both sides together, during the preceding three months, without pain or tenderness, and that he was first made aware of it by the remarks of his friends. On one morning it had been so much worse that he could not open the lids on waking; but this had subsided during the same day, and now, for some weeks, the affection had been such as I then saw it. It appeared to be a symmetrical partial œdema of the lids, of which the cause was concealed.

Not understanding the case, I first directed some purgatives, with alterative treatment, and an evaporating lotion to the lids, and subsequently gave him diuretics; but the conditions remaining the same, I ran some slender threads through the swelling on one side only, as an experiment, and left them in for a week, hoping there might follow some condensation of the tissues in their tracks; but when they were withdrawn, the swelling remained the same, but the integuments were rather redder. He now for three months, under the advice of my colleague, Dr. Farre, resumed the alterative remedies, with a strictly regulated diet, but without any good result.

During my absence from town in September, my friend, who was seeing my patients, gave him iodide of potassium, and applied the tincture of iodine to the swollen lids; and the former I continued on my return, but left off the tincture, as it appeared to increase the tumefaction, by drawing more blood to the skin.

In November, he was just as in the preceding February. There was the same redness and bulging of the skin, and the same feel of the parts: neither tenderness nor itching. His health was good. I noticed that his temporal fossæ were unusually large, but, as it afterwards proved, this had no bearing on the case. I had also a drawing made; but a wood-cut would not convey the appearance, as the redness of the integument was even more conspicuous than its swelling.

The attempts hitherto made having failed to remove the swelling, they were altogether laid aside, and I waited till the spring, to see whether by that time any spontaneous improvement might not take place. At the end of April, the young man again presented himself, and being exactly in the same state as before, he was anxious that I should perform whatever operation offered a chance of improving his appearance. I accordingly determined to employ a modification of the operation for entropion, and to remove, not merely a horizontal ellipse of integument from the most projecting part of the swelling, but also a corresponding portion of the orbicularis muscle and of the fascia below it, and so to endeavour to consolidate the integuments with the parts beneath, which seemed the principal seat of the disease.

On the 4th May I operated on the left side. A piece of the integument was taken up with the entropion forceps, and removed with scissors to the extent of two-thirds of the horizontal width of the lid, and one-third its vertical depth. The orbicularis thus exposed was healthy, and was removed to nearly the same extent, by means of common forceps and scissors; a dense cellular fascia then bulged forward in the gap. This fascia being removed in its turn, a mass of fat, resembling the natural fat of the orbit, and about as large as an almond, fell forward in the opening, and I immediately removed it. It was not tightly embraced by any

capsule of the areolar tissue which surrounded it, but was divided into pellets, or small lobes, which moved freely on one another. It therefore had not the appearance of a fatty tumour. After its abstraction, there was no other tissue projecting, and I therefore closed the wound by sutures, and had the satisfaction of seeing it heal in four days, with an almost complete relief of the deformity.

A fortnight after, at his own request, I performed precisely the same operation on the right side, and with the same result. On cutting into the sub-muscular fascia, a pellet of fat appeared, and was cut away; a lobe of what seemed to be lachrymal gland was then exposed to view, but, showing no disposition to project, it was not interfered with. When the wound healed, the deformity was even more completely removed than on the other side, more care having been taken with the shape of the piece of integument excised. Two months afterwards, the lids hardly bore any trace of what had occurred.

Remarks. Probably most surgeons of large experience in eye diseases, have occasionally met with a case like the preceding, in which a swelling, resembling œdema, and of which the most obvious character was a distended and somewhat pendulous and reddened condition of the skin of the upper lid, occurred simultaneously on both sides, in a young person otherwise in perfect health. I have myself seen but two others besides this one, and in neither of these was the swelling known to depend on the protrusion of fat, although I have little doubt that such was actually the fact. In both, the upper lid on each side was similarly affected, and both were young subjects.

The true fatty tumour of the orbital cellular membrane is comparatively rare, and it occurs singly, generally at the upper or outer side of the globe, in the loose areolar tissue outside the recti muscles. When sufficiently large to cause a prominence of the skin, it admits of being felt as a tumour, although readily retiring into the orbit under pressure; and on everting the lid, it usually projects under the conjunctiva, where that membrane is reflected from the lid to the globe, near the outer canthus.

The following case will illustrate some of these points, and show the difference between the adipose tumour of the orbit and the affection above described.

Case. *November* 1846. Priscilla Glennie, æt. 17, has a small, soft tumour by the outer side of the right globe. It is moveable, seems flattish, lies against the globe, and presents an edge forwards. It is not visible unless she directs the eye inwards, but it then projects slightly between the lids. It is covered by the conjunctiva, which is whitish, and seems adherent to it. The white colour and the shape of the tumour make it look like the lachrymal gland, for which, of course, it is not mistaken. She first noticed it about four months ago, when it was of its present size. She had previously felt some pain in the eye on reading, etc., and this irritability continues.

26th. I removed the tumour through the conjunctiva with scissors, after drawing it outwards with forceps. It proved to be a simple fatty tumour, lying loosely attached in the areolar tissue, between the external rectus and the lachrymal gland. The wound was healed in a week, and

the movements of the globe, though slightly restrained at first in an inward direction, soon became quite free.

When the case of H. J. B. presented itself, I was far from suspecting the swelling to depend on fat. It had more the appearance of œdema than of anything else, although its limited size, and the colour of the redundant skin, were different from what I had seen in any instance of simple œdema. There was no tumour to be felt; neither was there any projection within the lids in any position of the globe. Its existence in the same situation in each orbit also discouraged the idea of there being any tumour. On referring to the principal modern works, and especially to those of Lawrence and Mackenzie, I could find no account of a corresponding affection. I do not pretend to explain the reason of the remarkable projection of the adipose tissue in so symmetrical a form on the two sides, and at the same period of time. The thought suggested itself, whether it may not have depended on some enlargement of the lachrymal gland, analogous to the chronic enlargement of the tonsils, sufficient to displace and thrust outwards a fragment of the fat in which the globe is cushioned. But, had this existed, there would surely have been a perceptible swelling in the region of the gland, after the removal of the fat, and also a tendency in the gland to fall into the gap, both of which were wanting. There was no undue projection or solidity of the gland when examined through the wound during the operation.

With respect to the treatment adopted by me in this instance, I am quite of opinion that the mere removal of a portion of skin would not have sufficed. The integument would have been still pressed on by the fat beneath, and the swelling would have remained, with only a smoother and redder covering. Yet it would have been a natural course enough to have confined the operation to the skin, and not to have gone through the orbicularis; and this, in fact, I witnessed in one case.

14, Golden Square, August 28, 1849.

ON THE HEALTH OF LONDON DURING THE SIX MONTHS TERMINATING 29TH SEPT. 1849;

MORE ESPECIALLY IN REFERENCE TO CHOLERA.

By JOHN WEBSTER, M.D., F.R.S., Consulting Physician to the St. George and St. James's Dispensary, etc.

(Read before the Westminster Medical Society, Saturday, October 6, 1849.)

HAVING read a paper,[1] towards the close of last session of the Westminster Medical Society, upon the Health of London during the previous six winter and spring months, compared, especially, with the parallel months of the former season, I now propose making some general remarks, in regard to the diseases which have prevailed in the metropolis during the second and third quarters of the current year, or, in other words, the six months terminating on the 29th September, 1849.

I undertake this task the more readily, from the circumstance that London, many parts of England, and also of the Continent, have been

[1] Vide Reports of Westminster Society in this Number, for the remarks of several physicians on Dr. Webster's paper.

afflicted by the return of a most fatal epidemic, whereby many thousands have rapidly descended to an untimely grave, and from which there has followed a greater mortality than has been witnessed in Great Britain during modern times. Such being the fact, it is the imperative duty of every medical practitioner to come forward, each in his own sphere,—as, I am proud to say, the profession have done throughout the country, when so much anxiety and alarm prevailed,—in order that the causes whereby the pestilence has been produced may be explained, its direful ravages alleviated, and future visitations mitigated or prevented. Such are some of my motives for now bringing forward a few of the more prominent and instructive Vital Statistics of London, belonging to the preceding six months.

Notwithstanding the recent unhealthy condition of the metropolis, and the unusually great mortality recorded during the current autumn, throughout April, May, and June of the present year, so far from London being insalubrious, the public health exhibited rather more favourable characters than in the corresponding months of 1848, the total deaths, from all causes, having then amounted to 12,945 ; whereas, during the same three months of 1849, the whole mortality recorded in London, was only 12,754 ; being a diminution of 191 deaths, or about one and a half per cent. in favour of the recent quarter—and this, it should be remembered, although 268 victims had been carried off by Cholera, and 240 by Diarrhœa. The diminution, speaking generally, chiefly occurred in deaths from typhus and scarlatina. In deaths from typhus, the decrease was 370 ; and from scarlatina, 322 fewer persons died, than in the same period of 1848 ; however, from phthisis, pneumonia, and bronchitis, a slight augmentation in the mortality was reported. Taking, therefore, every particular into consideration, it may be said that, up to Mid summer last, the health of London was not such as to create anxiety, had there not been a reappearance of Diarrhœa and Cholera.

Statements of a very different description must, unfortunately, now be made respecting the three months which terminated on the 29th of September last. Since the great Plague, one hundred and eighty-four years ago, such an extensive mortality has never been witnessed in the metropolis as that which has occurred during the present autumn ; and which, compared with the parallel three months of 1848, is astounding.

I must here express my acknowledgments to the Registrar-General for his invaluable Reports. Without their aid, it would have been almost impossible to have pursued the present investigation, since to them I am mainly indebted for the facts and figures to which reference is often made. To Mr. Farr, the profession is also under great obligations : for by his arrangement and classification of the facts supplied by the deputy-registrars, the weekly reports have been made to convey most instructive and important information, especially in reference to the prevailing epidemic.

To exhibit the marked contrast betwixt the mortuary tables of the last three months, and those referring to the same period of the former year, it may be mentioned that instead of 13,503 deaths, then recorded from all causes, the whole number, during the same quarter of the present year, was 27,159 deaths, or a fraction more than double. This enormous, and, fortunately, during modern times, unknown

mortality in the metropolis, is not owing to any augmentation in the fatality of commonly-occurring diseases, but almost exclusively to Cholera and Diarrhœa, 13,114 persons having died from the first-named malady, and 2,697 from the latter; thus making a total of 15,811 individuals who became victims to these two diseases during the period referred to in this communication.[1]

History tells us of the Black Death of the middle ages. Reference is often made to the *Black Assizes;* and, in popular language, *Black Monday* is frequently mentioned. Now that the period of greatest danger seems happily to be passed, and the population likely soon to be restored to its ordinary state of health, the first seven days of September may well be called "the *Black Week* of 1849". During it, in London alone, 3,183 died, instead of 1,008, as in ordinary weeks; thus making the mortality, during the first week of the above month, three times the average, or at the rate of 454 deaths per diem, in place of 144, as in previous seasons. This increased mortality depended almost wholly upon Diarrhœa and Cholera, by which diseases 2,298 were carried off during the black week.

Notwithstanding the extraordinary augmentation of deaths during the past three months, it must be satisfactory to know, that, throughout the entire quarter, two diseases, which raged so fatally in the metropolis in the autumn of 1848, have proved much less fatal during the current year. From Scarlatina, instead of 1,560 deaths registered in London during July, August, and September, 1848, only 404 have occurred in the parallel three months of 1849, being a diminution of 1,156; Variola has also proved very mild during the whole of last summer, only 191 deaths having occurred from it throughout London since the 1st of last April, whereas 816 fatal cases were reported during the same six months of 1848, being a difference of three-fourths.

I propose—

First, to state a few data respecting the localities where the epidemic prevailed most fatally;

Secondly, to investigate the causes which apparently produced or influenced its appearance; and,

Thirdly, to consider briefly the proper measures to be employed to prevent, or, at least, to modify the violence of any future Cholera epidemic.

The symptoms, pathology, microscopic or chemical examination of the fluids and secretions, as well as the treatment of Cholera, must be left to a future occasion, and to other investigators; since, were I to enter upon these important topics, instead of a paper being adequate, a volume would scarcely suffice.

Localities in which Cholera prevailed. The worst localities were the low grounds adjoining the southern bank of the Thames. Notwithstanding the total population of this district being only about one-third of that on the northern side of the river, (or 580,000 inhabitants,) more than half the deaths by Cholera, or 6,708, out of the entire 13,114 re-

[1] Though I speak of *two* diseases, I do not deny that both were the results of the same epidemic influence; and perhaps modifications of the same malady.

gistered, took place in the southern division of the metropolis; which makes the amount of deaths, in proportion to the population, treble of that recorded on the northern side of the river.

Having adverted generally to the rate of mortality in the two great divisions of the capital, it now becomes interesting to notice the difference observed in several of the districts situated south of the Thames, as well for local comparison, as afterwards to contrast the amount of deaths there recorded with that met with in places lying north of the river, where a great discrepancy in the averages is often exhibited. For instance, in Lambeth parish, the deaths by Cholera were 1570 during the last six months; the ratio was therefore 1 in every 91 inhabitants. In St. George's, Southwark, where Cholera proved fatal to 811 individuals, one person died in every 64 of the population; whilst in Bermondsey, with its tan-pits, glue yards, tidal ditches, and other local nuisances, injurious to the health of the labouring population resident in that insalubrious part of London, not less than 704 persons died by Cholera, so that the very large proportion of 1 in every 56 inhabitants became victims to the pestilence. But even this excessive mortality was exceeded by the numbers registered in the parish of Rotherhithe, where 1 death from Cholera actually took place in every 38 inhabitants. Such an amount of deaths, seldom, if ever before witnessed, is most remarkable; and shows the extraordinary severity of the epidemic in that section of the metropolis.

In contrast with the great mortality met with in the southern districts, it is especially gratifying to mention one very important exception to the statements now made. Although Cholera proved exceedingly fatal, for several consecutive weeks, throughout the neighbourhood, Bethlem Hospital, with its numerous population, remained perfectly free from it, although situated in a district otherwise unhealthy, in reference to the recent epidemic. Respecting this large establishment, one or two circumstances may be briefly stated, as they seem suggestive of measures proper to be pursued elsewhere. At this Royal hospital, having a constant population of about 700 individuals, comprising upwards of 400 lunatics, besides the juvenile inmates of the house of occupations, officers, attendants, &c.; whilst there are weekly admissions and discharges of patients and others, whereby, during the last six months, perhaps 1000 persons have resided within its walls, *not a single fatal case* of Cholera has occurred during the entire year, nor indeed previously. This exemption, which I consider well worth recording, will however appear less surprising, when it is known that the ventilation of the hospital is excellent; the utmost attention is paid to cleanliness; the food is wholesome, plentiful, and regularly served; and there is a most abundant supply of pure water throughout the whole establishment, alike for baths, washing, and cooking. So copious, indeed, is the quantity, that in every water-closet, in consequence of a spring being attached to each door, whenever any person enters, the movement thus made simultaneously opens a valve, connected with a cistern, from which a torrent of water rushes into the seat; and this operation is repeated, when the patient retires. Further, through all the drains, water runs constantly; chloride of lime is also daily and freely used; and as every drain has been properly trapped, no odour ever prevails. A very deep

Artesian well—reaching to below the chalk—supplies the water required in the establishment, which a steam-engine pumps, at the rate of 70 gallons per minute, into the numerous reservoirs on the roof of the building, which are frequently cleansed, in order that the water may not be contaminated; hence, there is never any deficiency of this element, most essential in all institutions, but especially in asylums for the insane. It is, besides, proper to add that, during last spring, a common sewer, near one of the outer walls, which brought refuse from an adjoining street, was very properly covered over, lest the effluvia might prove injurious to the inmates. I have related these particulars respecting Bethlem Hospital, believing that they explain the immunity from Cholera, which this large institution has enjoyed during the epidemic.

It will be likewise interesting to state that, at another public establishment, in the management of which I also take some interest, in consequence of being under the same authorities as Bethlem, viz. Bridewell Hospital, in Blackfriars, a similar gratifying statement may be made, respecting its freedom from Cholera during the late outbreak, even although situated in one of the worst districts in the city,—having Fleet-ditch on one side, Puddle-dock on the other, and being also not far from Bride and Water lanes, where Cholera has proved specially severe; whilst there are, besides, burying-grounds near. Nevertheless, the disease has not yet appeared amongst the population, which averages about 130 persons, increased by changes to, perhaps, 200 individuals during the last six months. And this exemption has prevailed, notwithstanding that fatal cases of Cholera have recently taken place in houses almost abutting upon a prison, in which, it should be remembered, the inmates suffered from the epidemic of 1832. The recent immunity from Cholera is, doubtless, greatly owing to several circumstances of a similar kind to those mentioned in regard to Bethlem; but Bridewell, being a place of punishment, does not, of course, possess the same advantages; although the residents are well cared for, and treated according to the rules sanctioned by government for all prisons,—having substantial food, and good water. This exemption from the epidemic is the more remarkable, when we consider the class of persons to which the prisoners belong. They are committed under the vagrant act, are of all ages, and in every stage of poverty, filth, and frequently of disease; with constitutions, in many cases, shattered by debauchery, or enfeebled by destitution; but in Bridewell they are subjected to regular discipline, and are often better fed than when living at large. One important fact ought to be stated, as likely to have been instrumental in improving the salubrity of this prison; namely, that the ancient grave-yard of the hospital and precinct was closed about three years ago, by order of the committee, after having been used as a burying-ground for upwards of 250 years. This was not accomplished without expense, as the governors still pay an annual rent of 42*l.* 10*s.* to the original freeholder, besides incurring the payment of fees, &c. (from having to bury elsewhere prisoners who die in the hospital), amounting, sometimes, to 2*l.* 18*s.* per funeral.[1] However, the money is judiciously expended in abating such a nuisance; and I now allude to the closing of this grave-

[1] The following bill shows the items of extra expenses, in addition to those formerly and

yard as one instance of sanitary reform effected by a public body in the City of London, whose good example other parties would do well to imitate.

I now proceed to speak of the northern portion of the metropolis. In its population of 1,620,000, the deaths by Cholera were 6,406, or one fatal case in every 253 inhabitants. Thus, the average ranged about one-third of that in the districts south of the Thames, where one died in nearly every 86 residents. However, when more minute comparisons are made respecting particular localities, it is satisfactory to find, although the mortality by Cholera was considerable in the north-eastern part of the metropolis, it was by no means ever so high, even in the most insalubrious parishes, as in many of the southern. In Whitechapel, one death by Cholera occurred in every 156 inhabitants; in Shoreditch, one in every 134; and in Bethnal Green, which proved exceedingly unhealthy during the recent epidemic, the proportion was one death in every 120 persons resident within the parish. Again, in the City, although in the centre of an enormous surrounding population; notwithstanding, also, its Smithfield, Newgate, Leadenhall, and Billingsgate markets,—its very close crowded courts and alleys, its Fleet-ditches, Little Britains, and Alsatias,—*from its being situated, in many parts, upon a mound of gravel, having declivities in several directions, and possessing, comparatively with other places, good sewerage,* only one has died by Cholera in every 270 inhabitants; and of those who died, many lived in low, crowded neighbourhoods, such as Blackfriars and Whitefriars, and the immediate vicinity of the river.

Contrasted with the southern, north-eastern, and central parts of London, it becomes interesting now to notice the north-western districts, where Cholera has been much less fatal. Thus, in the parish of Marylebone, only one person has died in every 609 inhabitants; in St. James's, Westminster, only one death by Cholera has occurred in every 678 residents, and many of the deceased lived in crowded, confined, and often filthy habitations, such as Angel court, Peter street, and the close courts and alleys in the vicinity of Golden square. Lastly, in the parish of St. George's, Hanover square, one division of which (Hanover) is perhaps the most salubrious part of all London, only 121 persons have died by Cholera in a population of about 74,500; and it is important to add, that of these 121 deaths, 100 occurred in the lower wards adjoining Chelsea and the river, usually known as Belgravia, where nearly half the population of the entire parish reside. In addition

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still incurred, which the Governors of Bridewell paid for the interment elsewhere of one prisoner, in consequence of having closed the ancient burying ground of the Precinct.

To the Interment of * * * * * *	£	s.	d.
Ground	1	0	0
Vicar	0	5	0
Clerk	0	3	0
Sexton	0	2	0
Grave-maker	0	2	0
Bell	0	7	0
Desk Service	0	12	0
Registering	0	1	0
Two Bearers	0	6	0
	£2	18	0

to these deaths, it ought to be also stated, that they do not include thirteen fatal cases of Cholera reported from St. George's Hospital, situated in the district. In contra-distinction to the mortality in the lower or Belgrave division, it is useful to know that, although several of the deaths occurred in the May Fair district, still, in the northern division, comprising the neighbourhoods of Hanover and Grosvenor squares, and hence called the Hanover district, the deaths by Cholera have been so few during the late epidemic, that not more than one person in every 1846 inhabitants has become its victim, the total number being only 13; which gives a very different result from that met with in other parts of London, but more especially in such places as Bethnal Green or Rotherhithe.

Believing that a short account of the thirteen cases which proved fatal in the northern division of St. George's parish may, in some degree, illustrate the laws regulating the appearance of the disease under discussion, I subjoin a few details regarding them. Most of the persons alluded to lived in confined streets and badly-ventilated dwellings. Seven were adults, and six were infants or children. Amongst the adults, two were butlers, one of whom had been subject to habitual diarrhœa, and had recently laboured under delirium tremens. Two were, a stableman, and a stableman's wife; the former lived in a yard subject to animal effluviæ, and gases unfavourable to health, and had previously suffered from diarrhœa; the latter was poor and in want, and lately had typhus. The fifth case was a postman, living in a confined back yard; he was of an anxious disposition, and addicted to gin and bitters. The sixth was a carman, who also resided in a small, bad-smelling court. The seventh, the wife of a respectable tradesman, had hardly recovered from her confinement, which had occurred five weeks previously; one forenoon (when the epidemic was very rife) this woman purchased some bad plums, part of which she eat before dinner; afterwards, she dined upon a calf's head, and a tart made with the remainder of the plums; subsequently, she supped upon stewed beef-steak and oysters, both meals being washed down with her usual beverage. Diarrhœa and sickness came on early next morning; but, notwithstanding the severity of the symptoms, no medical practitioner was called in till near two P.M., when the disease had become so aggravated, that treatment proved inefficacious, and she died in the evening. The above history is one of the many which might be cited in proof of the danger attending such irregularities in diet, as might perhaps, in ordinary times, have produced little serious mischief. When such an epidemic of Cholera prevails, as that now leaving us, the whole population seem to be somewhat influenced by, or, at best, extremely susceptible to, its deleterious influences.

With regard to the six infants or children referred to,—one was the infant of the woman, the particulars of whose case have just been detailed: another, three weeks old, had, at the time, hydrocephalus; the third, aged eight weeks, had previously laboured under diarrhœa; whilst the fourth, four months old, had been similarly affected for five weeks: the fifth suffered from mesenteric glandular disease; and the sixth, aged ten months, had measles five weeks before, and was then also suffering from diarrhœa. All these particulars being known respecting the thirteen fatal cases met with in the Hanover district of St. George's parish—which are obtained from authentic sources—it seems surprising

that the deaths were so few, considering the irregularities of diet, the carelessness respecting hygienic measures, and the improper habits of many persons, to say nothing of the privations and destitution to which numbers in this, as in other parts of the metropolis, are unfortunately exposed. The comparatively elevated position of this part of London, its vicinity to Hyde Park, and hence freer ventilation, its generally wide streets, and open squares, the mound of gravel upon which much of the district is built, and the greater facility thus afforded for carrying off all refuse by the drains—however imperfect some of these conduits were recently reported to the Commissioners—have, doubtless, contributed to the fortunate immunity this locality has hitherto enjoyed; indeed, the local advantages now enumerated are so beneficial to the health of every inhabitant, that it is mainly owing to their absence (aggravated, of course, by the presence of other injurious influences) that the recent epidemic proved so prevalent and fatal in lower districts, devoid of similar advantages of situation.

The *sex* and *age* of the victims next merit attention.

More females than males have died of Cholera, but the difference is not great, as, in the whole 13,114 deaths, there was only about 9½ per cent. more women than men.

With regard to age, however, the peculiarity is much more striking. Upwards of half the entire number of deaths occurred in persons at the middle, or adult period of life. Speaking accurately, of the total deaths recorded from Cholera, 3,534 were under fifteen years of age, 7,565 from that period to sixty, and 2,015 beyond that age. More persons, however, died from thirty to thirty-five, or, at the prime of life, than at any other period.

Causes of Cholera. Lest farther minute statistical details may seem tedious, I now proceed to discuss—although only in a general way—the causes apparently influencing the production of Cholera. This difficult subject cannot, however, be explained, as can some of the previous questions, either by historical or statistical references. Nevertheless, according to the views I entertain, the inquiry may be divided into four categories; namely—

1. Atmospheric. 2. Local. 3. Individual. 4, and lastly, The Exciting Causes.

Upon each of these heads, I propose to make a few cursory remarks; not expecting, of course, that, on such debateable points, the views enunciated will receive the entire acquiescence of other investigators. In case, however, any doubt should still prevail as to the opinions I entertain respecting contagion, I at once say, my views have been long decided on this question; and as the disease is now almost universally admitted to be *non-contagious*, the question is not mooted in the present paper, but left to others to discuss, should they feel inclined.[1]

[1] With much deference to Dr. Webster, we beg to say that, within our own knowledge, the experience of the present epidemic has led many physicians, who previously held other views, to consider the disease, though not virulently contagious, as communicable by fomites, and also by personal intercourse, in several ways. It is also our belief, that much of the spread of Cholera in London, and throughout England, during the present epidemic, has arisen from the careless manner in which the healthy have communicated with the sick, in consequence of the anti-contagion manifesto of the Board of Health. Editor.

1. Respecting *Atmospheric Influences* as productive of Cholera, although chemical investigations have yet done but little towards elucidating the question, there cannot be much doubt. In the Campagna of Rome, where the worst forms of fever prevail, or in other districts of the globe in which malaria is most virulent, not much satisfactory information, as to any important chemical peculiarity in the composition of the atmosphere of these districts, has been hitherto obtained or illustrated conclusively; although not the smallest doubt exists respecting its deleterious effects, in particular seasons, upon the human constitution. Undoubtedly, experimentalists and physicians (among others, Moscati) have said, that the atmospheric air, in some malarious districts, during the existence of pernicious fevers, has occasionally a greater specific gravity than that met with in other and more salubrious situations, and is found sometimes to contain a flocculent-looking matter or substance, having, it is reported, a fungoid or animal appearance. So much, however, yet remains to be explained and established by conclusive experiments, as well as observation, that we are not yet justified in speaking with much confidence on the subject, and ought to suspend our opinion, till we obtain further information. Somewhat similar conclusions may be entertained in regard to atmospheric influences in Cholera;—we see the results, but find it difficult to explain all the phenomena.

Recently, the *ozonic theory* has occupied considerable attention. The views are certainly ingenious, and deserve further investigation. So few facts, however, have yet been brought forward to establish the deductions, that additional experiments and inquiry are necessary to support the opinions promulgated, as to the absence of ozone in the air being the negative cause of Cholera. With the view of contributing some data in regard to the influence of the atmosphere, during the recent epidemic, I would direct attention to the very peculiar weather prevalent in August last, when the Cholera proved so very virulent, compared with that observed towards the middle and end of September, at which period the disease began materially to decline. In the former month, the air felt always oppressive and ungenial; the atmosphere being generally hazy, and it looked, at times, like a thick mist. Towards the end of August, but especially in the last week, London seemed as if constantly enveloped in a dense fog, which hung over the entire metropolis, whilst the air was always unusually dry, very little rain having fallen at any time, and none during the last week. Scarcely any wind prevailed, and then it was south-west, or southerly, with diverging currents above. The thermometer exhibited, frequent and daily, very extensive fluctuations; the lowest temperature of the month being 42, the highest 82, thus making a difference of 40 degrees; but it is also important to notice (as I observed the same feature in the weather of 1832, when the Cholera prevailed so severely), that there often existed a great difference between the heat of the night and the day-time. In some nights, the temperature even ranged 30 degrees lower than in the preceding day; and throughout the entire month, the amount of electricity was particularly small, whilst the quantity of rain that fell, measured less than had been known for thirty years.

In contrast with this account of the very unusual atmospheric pheno-

mena observed in August, it is instructive to know, that during the greatest part of September, especially when the Cholera began to decline, the meteoric conditions were very different. Thus, early in the month, flashes of lightning with heavy rain supervened. On the 11th, there was a thunderstorm and hail, with a clear star-light evening, followed by deluges of rain, during the whole night. For four days afterwards, frequent squalls of wind prevailed, with occasional showers, which were accompanied by lightning and thunder on the 12th. During the third week, the atmosphere was generally clear, and often cloudless; there was much wind in the early part, mostly north or northerly, with altogether different phenomena from those observed in August. The barometer was generally high, having continued at upwards of 30 inches from the 14th to the 21st of September; whereas, during the most fatal period of the epidemic, it stood sometimes an inch less. Showers fell on the 21st, and much rain during the whole of the 23rd; the weather was stormy on the 29th, with heavy rain and electric currents; the temperature, throughout nearly the entire month, ranged much lower than in August, and there was less variation between the heat of the day and night; the difference was 26 degrees on one occasion, but latterly it was frequently considerably under that amount, and usually varied from 15 to 18 degrees. I have particularly alluded to this variation of temperature between the night and day-time, because I consider it of importance in regard to Cholera. According to my views of disease, this marked difference in the temperature not only materially influenced the accessions of attacks, but explains why so many persons, during the late epidemic, were seized in the night; as likewise the greater severity of the symptoms, and dangerous character of the malady, which then supervened. This peculiar feature in the recent epidemic, of coming on so often during the night, or early in the morning, has been repeatedly noticed by medical practitioners, although the remark applies also to other maladies. Cold nights are always most injurious to the human frame, as every one knows, especially after a high range of temperature during the previous day; not only is disease thus frequently induced, *cæteris paribus*, but the circumstance also accounts for the number of deaths which often take place towards sunrise, or early in the morning, at which period the temperature of the surrounding air often falls one or two degrees within a very short period of time; whereby the sudden coldness then produced acts with greater energy upon the system, particularly should the individual be asleep at the time, the danger being always greater under such circumstances.

2. In reference to the *Local Causes*, which have materially contributed to the dissemination of the epidemic, it appears, from the statistical data already adduced, that low, damp situations, especially those near the banks of the river, have invariably proved the most insalubrious. The vicinity of common sewers and open ditches, containing putrified materials, the neighbourhood of constantly turned-up grave-yards and of cesspools, the defective means for carrying away decaying animal and vegetable exuviæ, the absence or deficient supply of good water, the want of free ventilation of pure air, filth, overcrowding, and similar abominations, unnecessary to particularize at greater length, have all acted as efficient local causes, indubitably tending to make any place—

even though otherwise salubrious—the nidus of epidemics, whether scarlatina or typhus, but more especially Cholera. This truth is now so incontrovertibly established by most ample experience, both in London and elsewhere, and so well known to medical men, that to discuss such topics any further, seems superfluous.

In confirmation of the opinion, that low localities are peculiarly the seats of Cholera, I may mention an instructive fact, having reference to its recent outbreak in the Salpêtrière of Paris. This institution is situated near the banks of the Seine, and in rather a low situation. The population is upwards of 4,500, chiefly aged and infirm females, paupers of the department, of whom 1,300 are insane. At this very large establishment, one-third of the whole inmates died by the recent epidemic; the ratio of deaths amongst the lunatics being nearly twenty-three per cent. At Bicêtre, on the other hand, which is the great poor-house and lunatic asylum for the male paupers of Paris, having nearly 4,000 inmates, very few persons (comparatively speaking with the Salpêtrière), died by Cholera; whilst the amount of deaths, from the same cause, amongst the lunatics, was under five per cent., or less than one-fourth the proportion observed amongst the insane females. The chief reasons of the above discrepancy seem to be sufficiently obvious. The Bicêtre is situated on high and dry ground, a few miles distant from the Seine, overlooking the capital, and so constructed, that the winds of heaven blow freely through the numerous courts, and round the buildings; whilst it is likewise free from several noxious agencies elsewhere prevalent.

3. *Individual Causes* next engage our attention. In this part of the inquiry, I shall likewise be very brief, presuming that there cannot be much difference of opinion amongst medical practitioners, in regard to most of the points to which I may allude. Amongst the causes comprised in this category, must be indubitably classed dissipated habits, broken-down and debilitated constitutions, previous disease, personal uncleanliness, deficient nourishment, neglect of premonitory symptoms, deranged or defective general health, misery and destitution,—in short, whatever impairs the physical strength or moral energies of an individual.

4. Among the *Exciting Causes* I would enumerate bad water, decaying or putrid food; unripe, raw, or decomposing vegetables; salted provisions of bad quality; intoxication and dissipation; exposure to the night-air in insalubrious localities, especially if asleep; great bodily fatigue; strong purgative medicines; fright; all mental emotions of a depressing character; and those influences which suddenly depress the nervous system, and debilitate the corporeal frame.

I have now succinctly enumerated some of the causes, which mainly, in my opinion, contributed to the recent spread of Cholera. Undoubtedly, by many, its appearance has been ascribed more positively to certain special influences. Thus, some have considered that the epidemic was chiefly owing to the absence of ozone from the air. Several have attributed it to a particular condition of the air, not yet described satisfactorily; others, to the presence of animalculæ, or fungi, in the water, the secretions, or in the atmosphere. Bad water, bone-houses, grave-yards, cesspools, open sewers, drains loaded with fœtid matter, and similar

abominations, have respectively been considered as the paramount, if not the exclusive causes of the epidemic. Lastly, a few authorities still maintain that contagion is the principal agent.

Respecting the origin of epidemic diseases, many deduce conclusions from a too contracted view of the questions at issue, and of the facts involved. Influences, or agents, which separately have only a slight effect upon the system, often, when combined, prove active causes in producing disease. Here, we may advantageously take a hint from the curious results met with in the physical world, and which the investigations of chemists have so often demonstrated. Elements may produce little or no action upon the human frame; but the same bodies, if combined in a certain form, may prove extremely deleterious. For instance, when carbon, hydrogen, or nitrogen, are applied separately to a living animal, each seems inert, or, at least, produces very little effect; but they may combine, in definite proportions, according to chemical laws, to form prussic acid, which operates as a most violent poison. Such examples of the action of bodies composed of elements separately almost inactive, but, conjoined, most powerful, demonstrate how careful medical men ought to be, in ascribing diseased action to special agents or influences.

Speaking generally, I consider Cholera to be amenable to somewhat similar laws to those which regulate the accession of pernicious intermittent fevers in certain districts and during particular seasons. There is usually a combination of influences causing the disease; and, although it has now been attempted to point out some of the most efficient causes producing Cholera, much yet remains to be ascertained, so as fully to explain the various phenomena.

Preventive Measures. As the epidemic has not yet altogether ceased, and may again recur, I now proceed to make a few remarks upon the means most likely to prevent, or modify the virulence of, subsequent epidemics.

First, then, I would most decidedly say, *intramural interments must be interdicted* throughout the kingdom. Drainage must be extended in densely-peopled neighbourhoods. Slaughter-houses must be removed from the crowded haunts of men; and public markets properly regulated, frequently cleansed, and, wherever practicable, placed in open, airy situations. Common sewers must be scientifically constructed, so as not to act as the conduits of disease. The Thames must no longer continue to be the "cloaca maxima" of London, especially as its filthy contents, by quadruple diurnal agitation, are rendered in a higher degree noxious to the neighbouring inhabitants, and to the many thousand persons, who daily use the river as a metropolitan thoroughfare.

Habitations in low, damp, and confined localities should be avoided, or made more salubrious by artificial means. The physical well-being of the population, especially the poor and labouring portion, must be improved. The light of the sun, and the admission of pure air into every dwelling, ought not to be taxed or impeded, but in every manner promoted, especially by a Government endeavouring to improve the public health. As the Imperial Legislature has sanctioned the importation of all kinds of food into the country without any duty, in order to increase

the sustenance of the community, so ought it to permit the untaxed entrance of light and pure air, both being as indispensable as corn and mutton to the healthful maintenance of animal life and mental vigour. Good water should be supplied for every purpose, more particularly in densely crowded districts; and localities known as the hot-beds of disease, must be cleansed from all abominations.

Many other important sanitary measures might be mentioned, were their necessity not so obvious. This much, however, I would here strenuously assert. All nuisances, whether public or private, must be abated, and vested rights and individual interests must give way to the health of communities. On these points, "salus reipublicæ" is "suprema lex;" and, as on such questions there can be no mistake, there ought assuredly to be no compromise.

Exemption of Classes. As a counterbalance, in some degree, to the sad mortuary details contained in the previous pages, it is gratifying to state, that throughout the entire population of London, during the prevalence of the recent epidemic, several marked exceptions have been noticed in the exemption of individuals from Cholera, as well as in the rarity of the disease amongst various sections of the community. Several instances which have come under my notice appear worth relating.

The military in the metropolis, generally speaking, never were in a better state of health than during the epidemic, although a few fatal cases of Cholera occurred in different regiments. Respecting the fatal instances amongst the troops in London, it is both instructive and important to know, that in one regiment, which lost six men by Cholera, five came from a battalion quartered in the Tower, and only one from the other division occupying a barrack at the west-end. It is likewise worth adding, as an illustration of the influence which locality and individual circumstances exert in producing the disease, that one of the severest cases which a medical officer in the Guards met with, recently occurred in a soldier who had absented himself, without leave, from his barrack in the western part of London, and had passed two days in drinking with a sailor, in Ratcliff Highway. From this unhealthy district, the soldier was brought westward in custody, and placed under confinement, where the malady very soon manifested most severe symptoms. This patient recovered, although he continued in a precarious condition for some time; and, probably, had he remained for a longer period in the tainted district, or had not been placed at once under judicious treatment, the issue might have been different.

Again, amongst the metropolitan police, which, exclusive of the city force, comprises 5,600 individuals, notwithstanding the laborious duties which they often have to perform, their frequent exposure to the night air in all weathers, and especially in the most insalubrious districts, the sickness and mortality was less than might have been expected. According to the return which my friend Mr. Fisher, surgeon-in-chief to the police, has kindly favoured me with, only twenty-seven policemen have fallen victims to Cholera during the recent outbreak; that is, one in every 207 members of the force, or about ·5 per cent. The particulars respecting the localities in which these twenty-seven deaths

occurred are likewise of importance, from being analogous to those observed amongst other portions of the population. Thus, of the total fatal cases recorded amongst the metropolitan police, twenty, or three-fourths, occurred south of the Thames; eleven of whom died in Southwark or its vicinity, and three in Lambeth; five were reported from the north-eastern districts; two died in Westminster, one being on the Thames; whilst *not a single fatal case by Cholera was met with amongst the whole police force stationed throughout the north-western districts of the metropolis.* No statements can be more conclusive respecting Cholera and its propagation, than those now made respecting the military in London, but more especially the metropolitan police, consisting almost exclusively of stout, healthy, and mostly young men, placed under the same discipline and regulations. The deductions to be drawn from such data are self-evident.

Having already alluded to Bridewell, it may appear superfluous to speak of other prisons; nevertheless, I must notice two other similar establishments. The first is the Cold-bath Fields House of Correction —the largest jail in England—in which the regulations, sanitary measures, dietary, &c. are carefully attended to by the authorities. At this prison, notwithstanding there being usually about 1200 inmates, not a single fatal case of Cholera has occurred during the recent epidemic, even although the disease prevailed in the neighbourhood; and it must be added, that the prisoners were otherwise quite as healthy as at any previous period. Indeed, so little sickness has been recently met with amongst the numerous population of this jail, that last week only two cases of illness were under treatment in the infirmary. The other jail referred to is the Model Prison, Pentonville, in which also no fatal case of Cholera has occurred amongst its inmates, amounting to about five hundred individuals. This immunity is, no doubt, owing to its open, airy, and elevated position, its good discipline, its scrupulous cleanliness, and plentiful supply of excellent water, much of which is pumped up from a well in the establishment.

From the workhouses in the metropolis much useful information might also be adduced. I will, however, only allude to two, the first being situated on the low ground south of the Thames, the other on an elevated position in the northern district. The former, or St. George's workhouse, Southwark, which contains, on an average, 400 inmates, is situated in the middle of one of the worst parts of the Borough, namely, the Mint. This locality, besides being very insalubrious, is inhabited by the very lowest, if not the most wretched, class of society, and amongst whom deaths by the recent epidemic have been exceedingly numerous. Nevertheless, among the ordinary residents in this establishment, only eight fatal cases of Cholera have occurred; and it is instructive to know, that these were chiefly the aged, infirm, and sickly. It was not so, however, in regard to the persons admitted from the neighbourhood; the fatal cases recorded having been principally in that class of patients. This rarity of deaths amongst the resident paupers indubitably depended upon similar causes to those detailed in other public establishments: namely, the house is well ventilated, even although an old building; it is kept very clean; the food is abundant and nutritious; whilst the water is of good quality, and plentiful. The other

workhouse to which I would also allude is that of the parish of Islington, situated on elevated ground, well drained, as also properly ventilated, and where the food is good, with water supplied by the New River. In this institution, having about 350 inmates, only two cases of Cholera have occurred, although the residents comprise many paupers of broken-down health, from years of suffering, privation, and disease. Respecting the two fatal cases of Cholera reported from this workhouse, it is instructive to state, that one was sixty-three years of age, with a chronic cough, swelled legs, and a bad constitution; the other had lived for a short time in the same house with a person who fell a victim to Cholera in an infected district, from whence she was brought, and died in the parish Infirmary.

Another illustration of immunity from Cholera, among a class of persons likely to be attacked, may be derived from the St. George and St. James's Dispensary, to which I am attached. At this institution, out of 3,252 patients, almost exclusively living in the upper wards of these two parishes, and attended by the medical officers during the by-gone six months, not a single fatal case of Cholera has occurred; whilst it is also remarkable, that fewer persons labouring under ordinary diseases have been admitted during the last three months, especially in September, than throughout the previous quarter, comprising April, May, and June.

Lastly, I would mention, that, at insurance offices, which comprise many thousand persons of the middle or upper classes of society, and on whose lives millions of money are now insured, notwithstanding deaths by Cholera have been reported at particular offices, the general mortality, from all causes, amongst the assured, has even ranged less than usual. At the London Company, to which I am the medical adviser, not only has no death by Cholera been reported, but the casualties from ordinary maladies have fallen under the average. And as similar statements have been made to me by other parties well able to give information—especially by Mr. Neison, an authority on such questions,—the opinion now advanced must be correct.

The various statements made regarding the exemption of particular places, and the immunity of different persons from attacks of Cholera are instructive, and deserve further investigation; more especially as the epidemic may, I much fear, recur at future seasons. The malady has done so in other countries, as also in England, and may do the like again, even with similar, if not with aggravated virulence. Many authors might be referred to respecting the history and previous prevalence of Cholera, but I will only now allude to Sydenham. According to him, Cholera Morbus was not only very common, but exceedingly fatal, in his day, as also previously; indeed, this epidemic disease seemed like a plague, from the mortality it occasioned; nay, it was even called, in common language, "Plague, or Gripings in the Guts". From it, during the year 1669, according to the above celebrated physician, not less than 4,385 persons died in London exclusively, which large mortality, in a population of about 674,000, makes the ratio of deaths nearly the same as during the present year. In 1670, the deaths from the same cause amounted to 3,690. The disease reappeared frequently after-

wards, coming on generally about the close of summer, or towards the beginning of autumn; in fact, similar to the recent epidemic; or, to quote the quaint expression of Sydenham, when describing the Cholera Morbus then so virulent, "it recurred as constantly as swallows in the beginning of spring, and cuckoos towards Midsummer."

Indubitably the word Cholera is not mentioned in the old Bills of Mortality, which I carefully examined at the British Museum. The expression in these reports is, "Gripings in the Guts", being, doubtless, the vulgar term, and hence adopted by the parish clerks of London when drawing up their certificates, instead of the more correct appellation contained in the works of Sydenham. This epidemic malady continued to prevail throughout the remainder of the seventeenth century, although to a less extent than at previous epochs. During the early part of the eighteenth century the complaint declined considerably; so much so, that exactly one hundred years ago, or in 1749, otherwise a very unhealthy year, seeing that 25,516 persons died in London, of whom 2,625 were carried off by Small-pox, only 148 persons died of the epidemic so common in the time of Sydenham. Subsequently, the disease became still more infrequent; and, in 1793, it had almost disappeared; as in that year, according to the old Bills of Mortality, the number of fatal cases registered, from the same cause, had fallen to fourteen, in a total of 21,749 deaths reported to have taken place from all diseases, amongst upwards of one million inhabitants, at that period resident in the metropolis.

24 Brook-street, October, 1849.

BIBLIOGRAPHICAL RECORD.

PRINCIPLES OF MEDICINE: comprising General Pathology and Therapeutics, and a Brief General View of Etiology, Nosology, Semeiology, Diagnosis, Prognosis, and Hygienics. By CHARLES J. B. WILLIAMS, M.D., F.R.S. pp. 533. London: 1848.

(Concluded from p. 856.*)*

HAVING completed the purely pathological portion of his work, DR. WILLIAMS, in the seventh and last Chapter, after alluding to PROPHYLAXIS, as being connected rather with special pathology, treats of the important subject of HYGIENICS. The value of such an addition is unquestionable, when we reflect that the duty of the conscientious practitioner consists no less in the prevention, than in the alleviation of disease; and that the restoration of health very frequently depends, in a great measure, on being able to direct and control those hygienic circumstances, which have originally impaired it, or are continuing to exert a deleterious influence.

The subjects treated of in this chapter are arranged under the following heads: *Food; Clothing; Temperature; Air; Exercise; Mental Occupation; Sleep;* and *Excretion.*

FOOD. This should be "digestible, nutritious, and calefacient; and the articles which duly comprise all these qualities will be the most wholesome food." The importance of a due combination of albumen, oil, and sugar or starch, with water as their diluent, is exemplified by some remarks on the common articles of diet.

Wheaten bread contains the albuminous and amylaceous principles, and only requires the addition of butter to fit it for moderate nutrition. "The goodness of bread", Dr. Williams observes, "depends not only on the character of the grain from which the flour is obtained, but also on the mode and degree of its fermentation and baking. If fermented with leaven instead of yeast, or if over-fermented, acetic acid is generated, and the bread is sour; and this is the common fault of bread in large towns where the supply of yeast is insufficient, and it prevails universally on the continent. This evil is avoided in the unfermented bread, which is rendered porous by an effervescence of carbonic acid gas, caused by an admixture of carbonate of soda with the flour, and hydrochloric acid with the water, of which the bread is made. When well prepared, such bread is very sweet and free from acidity; but, unless carefully prepared, it is liable to be heavy, and, like imperfectly fermented bread, is then unfit for mastication. Bread insufficiently baked is glutinous and indigestible, and much of the same objection applies to quite new bread which has not dispersed its moisture. These defects may in great measure be remedied by toasting the bread in thin slices, which has also the advantage of dispersing much of the acid from sour bread. Very white bread is objectionable, as being less nutritious (having less gluten), and more constipating, than that made with less refined flour; but the coarse material commonly sold as brown bread errs to an opposite extreme, in containing a bran so coarse as to be irritating to many stomachs. Good country bread, fermented with yeast, and well baked, presents the kind most generally wholesome." (pp. 471-2.)

Meat contains albuminous, oily, and gelatinous principles, besides creatine and other extractive matters, and requires to be combined with vegetables or bread, to render it suitable to the palate and stomach. The relative merits, as articles of diet, of the various kinds of animal food are pointed out; and the following plan of diet is recommended as being suitable, with some exceptions, to the majority of healthy adults.

"*Breakfast* at from 8 to 9 A.M., of bread or dry toast, with a moderate quantity of butter. One or two new-laid eggs, boiled three minutes and a half; or a little cold chicken, or game, or even a mutton chop, may be added for those who use much bodily exertion. Beverage, one breakfast-cupful of *café au lait*, that is, clear strong infusion of coffee, with scalded milk, in proportion of one-third of the former to two-thirds of the milk. Cocoa, deprived of fat, or thin chocolate, with milk, may be substituted.

"*Luncheon*, at from 1 to 2 P.M., may consist of a small basin of good shin of beef soup, with vermicelli, rice, or toasted bread in it. If meat have been taken at breakfast, a biscuit, or piece of bread and butter, or small sandwich may suffice for luncheon; wine and malt liquors are generally better avoided at this time, unless dinner be taken at this hour.

"*Dinner*, at from 5 to 7 P.M. (the later hour is not recommended, but is often unavoidable.) Wholesome fresh meat and vegetables, well but plainly cooked, served hot, carefully proportioned, properly masticated; varied from day to day, with simple additions of fish, and moderate quantities of farinaceous or fruit puddings. Highly seasoned dishes, pickles, salted and dried meats, rich and heavy pastry, and cheese, except as a mere relish, to be excluded from a table professing wholesomeness. Beverages: sound white wine (sherry or good Marsala, from one to three glasses), which is generally better mixed with water; or sound Sauterne or Moselle, unmixed. Those who use much exercise may substitute sound malt liquor, bitter ale being the lightest, and good porter or stout the more sustaining. Half a pint is generally as much as is good for the health. Many thrive well, especially in the country, without any fermented liquor. If water is taken, it should be in moderation, otherwise it may interrupt digestion. Some find warm water, or milk and water, a pleasant beverage. The habit of taking wine after dinner is one of luxury, not of health, and all that can be said of it in hygienic instructions is—the less the better. The practice of taking a little fruit at the same time is not equally hurtful, provided by its quality or quantity it do not excite indigestion.

"*Tea.* The English custom of taking tea, or a simple warm liquid meal three or four hours after dinner, is a very salutary one, and probably disagrees only with those who dine too late, or overload the stomach at dinner. The purpose of the warm liquid is to assist in the separation and absorption of the chyle from the chyme, which takes place at this period. And it is obvious that it would interfere with this process to introduce solid food into the stomach; therefore little or nothing should be eaten—certainly not quantities of buttered toast, rich cake, and the like. Two or three moderate cups of black tea, with a little milk and sugar, forms a wash to the stomach to carry away the taste and smell of dinner, and remove all acrid materials, left by digestion, which might disturb that rest for which the hour now approaches." (pp. 473-4.)

An early dinner would be preferable, if it were possible to devote sufficient time to the meal, and to rest after it. If it be purposely made light, it necessitates supper. To avoid the symptoms of indigestion, which are liable to arise from a late supper, it should be light, and taken an hour or two before going to bed. "Those who use much exercise may take with advantage a little light meat, chicken, game, white fish, or lightly-dressed eggs, with a small quantity of wine and water, or sound beer (if this do not disagree). Those who require less sustaining food, as sedentary, plethoric, or inflammatory individuals, will find a more suitable supper in a light farinaceous pudding, bread and milk, or oatmeal porridge; the last being especially useful in persons of costive habit. A few currants, raisins, or a little apple, with farinaceous puddings, counteract their constipating tendency." (p. 475.) Regularity in the hours of meals is of great importance, and long fasts should be avoided. Irregularity and fasting act injuriously, both by disappointing the stomach in its expectation of food at regular intervals, and partly by pro-

ducing inanition. "When it is borne in mind that food is intended, not only to supply the slower process of nutrition and reparation of the body, but also to afford materials for the immediate protection of the blood against the chemical action of the oxygen absorbed in respiration, and of the stomach against the chemical action of the gastric juice,—the injurious tendency of long fasts will become apparent, and the more so in proportion as the small capacity of the digestive powers limits the quantity of aliment taken at a time." (pp. 475-6.)

With regard to Clothing, much valuable instruction may be derived from considering the various instinctive and natural provisions in the lower animals for changes in their clothing, to suit variations in seasons and weather. We find, in them, the warm or winter coat formed in the autumn, more rapidly when it is cold; and slow to come off in spring, when the approach of summer is tardy. Again, cold causes a partial erection of hairs and feathers, which increases the thickness of the covering, and retains in its interstices a portion of warm air; while warmth causes hair and plumage to lie smooth, and to form a thinner covering. Some animals employ additional means: horses in winter often roll in dirt and mud. This gives the coat thickness, and power to resist cold. Birds render their plumage waterproof by means of oily matter, and they appear to get rid of it in warm dry weather, by means of rolling in the dust: some land-birds delight in washing under the same circumstances. These facts, says Dr. Williams, "are not devoid of instruction in regard to the dress of human beings, who should learn to cover their nakedness under the guidance of experience and reason, which may be better or worse than instinct, according to whether they are well or ill exercised. It argues little for the boasted superiority of man's reason, if it do not guide him to means more effectual in resisting the hurtful action of external temperature, than those instinctively possessed by the lower animals; and yet there can be little doubt that none of these suffer from cold, wet, and atmospheric changes, to the degree in which human beings do. In truth, reason and common sense are too frequently set aside by foolish habits originating in vanity, fashion, caprice, prejudice, indolence, ignorance, or some such evil influence, and disease and infirmity are the penalties incurred by folly." (pp. 477-8.)

The means of guarding against external cold, or wet and damp, are next pointed out; and the propriety of observing caution in the change from winter to summer clothing, and *vice versâ*, is inculcated. The circumstances or conditions of the system, which require additional warm clothing, are referred to; and Dr. Williams here observes: "Under the influence of these conditions, the feeling of chilliness, particularly on the surface and in the extremities, is an indication of the need of more clothing; and if this be used to prevent the sensation of cold, it will often counteract those disturbances of the circulation and internal congestions to which the weakened body is liable, and which lay the foundation of many diseases." (p. 481.)

The head and face require but little the protection of clothing. The final cause of this is the necessity of a free communication with the exterior for the senses, breath, speech, and nourishment. The physiological cause of the greater power of the head to resist cold, is probably to be found in the greater size and less varying calibre of its blood-vessels. But during exposure to the air, and during the night, it is proper to use such light covering as may prevent checking the perspiration of the surface and the secretion of cerumen. Dr. Williams considers India-rubber web, gutta-percha, and similar materials, as valuable means of resisting wet and cold, but prefers their being worn as external clothing,—at all events not so near the skin as to check the escape of perspiration.

Air, as a hygienic agent, is referred to in its states of *dryness* and *moisture*, *temperature*, and *purity*. The general effect of a very dry air is the production of rapid evaporation and high electric tension. Tonicity is usually

augmented ; while the desiccating, and probably the electric action of the air, induces a degree of excitement, beneficial in those of relaxed habits, but often detrimental in the irritable or sanguine. A very dry air, with heat and motion, impairs cutaneous perspiration, and excites various kinds of cutaneous inflammation. Moderately dry and warm air is salutary, "by facilitating the purification of the blood in the lungs, by improving the tone of the moving fibre, by checking tendencies to excessive secretion, and by counteracting various septic processes both within and without the body, which are generally promoted by humidity." The physical conditions with which a dry air is most permanently connected are "a dry soil, from which the water of rain and dew speedily drains off, or evaporates, as on rocky surfaces ; or sinks deeply, as in sand, chalk, and light gravel. The nature of the subsoil is therefore of the greatest importance in determining the character of the air of a locality ; and the kinds above-mentioned are the most favourable to permanent dryness of the air. A declivity or undulating surface, and a freedom from dense foliage and very luxuriant vegetation, contribute also to the dryness of a neighbourhood, and generally thereby to its salubrity." (p. 484.) East winds are usually dry ; but the east and north-east winds are often injurious from their bleakness and penetrating coldness ; and the south-east, from its sultry and oppressive quality in summer. It seems also, that some of its peculiar effects are connected with electric tension ; and it should not be forgotten, that "during the prevalence of this wind especially, the air becomes surcharged with animalculæ tribes, and certain epidemic diseases, especially Asiatic cholera, and sometimes influenza, make their greatest progress." (p. 485.)

Damp or moist air contains less oxygen, and hence has less vivifying powers; it also favours the processes of decomposition and infection ; and may be contrasted in other points with moderately dry air. A warm moist air is universally relaxing ; while cold damp air is even more pernicious in its effects. From the latter result various aberrations from the normal chemistry of the body, producing retention of lactic acid, formation of oxalic acid, rheumatism, neuralgia, tubercles, and many other affections. Dampness of the air may arise from the permanent retention of moisture on or near the surface of the ground ; or a house may be damp from its own materials. "Wet weather and damp winds, such as the south-west, are less injurious causes of humidity, because less permanent ; but their influence is often manifest during their continuance, and always most so in localities that are damp from other causes. The air of the sea-side, even on the south-west coast, although generally abounding in humidity, is far less injurious than that of damp places inland ; apparently because much of the sedative and chilling operation of marine humidity is counteracted by the stimulating influence of the saline particles which it contains. The different effects of a sea-fog and of a land-mist are well known." (p. 486.) The hygienic indications are chiefly of a protective and counteracting character. Artificial heat, combined with adequate ventilation, is an available and efficacious desiccating agent ; and, in limestone districts, much good results from keeping pans of quick lime in various apartments, especially on the ground-floor. This is also a serviceable precaution against malarious and infectious diseases. "To diminish the dampness of clay and marshy soils in the immediate vicinity of dwellings, much may often be done by an efficient system of covered drainage ; by the removal of superfluous trees and shrubs ; and, where practicable, by covering the surfaces which are most constantly wet, with light sand, gravel, brick and mortar rubbish, or some similar light and porous material, which may form an artificial superstratum, and intercept the influence of the damp ground. The insalubrity of many low parts of the metropolis, especially in Pimlico and Westminster, has been wonderfully diminished by the latter expedient. A parallel protection against the damp of limestone-walls of houses is obtained by the process of battening or covering the wall with

wood and canvas, or lath and plaster. The free use of concrete, or of slate or metallic plates in the foundations of houses, to prevent the rising in the walls of moisture by capillary attraction, should never be neglected, particularly in damp localities, where the lower parts of the building are likely to be inhabited." (pp. 486-7.)

The TEMPERATURE most conducive to comfort and health is about 63° Fahr., being thirty-five degrees below that of the interior of the body. It is rarely expedient to exceed this; and, when more warmth is required, it should be supplied by clothing or other means. The advantage of a degree of coolness in the air below that of the body arises not only from more oxygen being contained in a given bulk, but from the difference in temperature tending to maintain a current of respiration. Over-heated rooms, or those warmed with stoves of heated air, are peculiarly oppressive. We have, in the different temperature of the body and of the external air, an illustration of the adaptation of man to the circumstances in which he is placed. "The animal body being naturally much warmer than the surrounding air, operates as a ventilator for itself, by the same consummate adaptation of pneumatic laws as that which supplies a flame or fire with a continued current of fresh air; and as we see a fire burn brighter and clearer in frosty weather, so an animal breathes a purer denser air, which if not injurious by its cold, is refreshing and invigorating to the body. Not only healthy and robust persons, but also some who are asthmatic or otherwise weak in respiratory power, acquire increased strength and energy in clear cold weather; and even those who, from weakness of circulation, cannot resist continued cold, and usually require a mild atmosphere, are generally refreshed and benefited by breathing cold air for short periods when exercise and warm clothing protect them against its sedative and chilling effects". (pp. 487-8.) Artificial heat is chiefly required in infants and in very aged persons; also in pulmonary invalids, who suffer from even brief impressions of cold, and should not, therefore, venture into the open air in cold weather without the protection of a respirator.

The ventilation of apartments is greatly promoted in winter by the difference of temperature between the air heated by respiration or by a fire, and the surrounding atmosphere; but in summer, where the temperatures are more equal, it is necessary to provide means to assist in maintaining a current of air, by opening windows and doors, and in cooling it by evaporation from a moist surface, or by sprinkling with cold water. To obviate the inconveniences commonly experienced in the ventilation of rooms in cold weather, Dr. Williams gives a decided preference to the means recommended by Dr. Arnott. The apertures formed in the room may, by means of a simple self-adjusting valve, be made to prevent too strong a current, or one in a wrong direction. "For perfect ventilation, two apertures (or sets of them) are requisite; one for the supply of fresh air, another for the exit of that which is foul. These should be placed at opposite sides of the room, and it is generally advised that the outlet should be placed near the ceiling, which is certainly the best position; and it may be made into the chimney where a fire is used (an efficient valve preventing the influx of smoke), or through the ceiling or roof, or in a top window pane, where there is no chimney. For the purpose of affording the freest influx of air, an aperture near or in the floor would be the most suitable position; but it is objectionable on account of the chill which it communicates to the feet and lower parts of the body. Commonly, therefore, the inlet for fresh air may be made in the upper pane of a window or panel of a door, most remote from the outletting aperture; and to prevent draughts, and to promote the diffusion of the air through the room, the opening should be covered with wire-gauze or finely perforated zinc plate; in addition to which, if necessary, an oblique screen of wood or curtain may be placed before it to direct the current to the walls and ceiling. By these means the fresh air, which is heavier, because cooler,

than the air of the room, gradually falls, and is dispersed, displacing the warmer foul air; and reaches the middle of the room, cool and refreshing for the heads and breaths of the inmates, yet causing no draughts on the lower extremities. In very cold weather, it is certainly advantageous to have the supply of external air moderately warmed before it enters the room; and the best method of effecting this, is by means of a well-regulated warm air stove, or an Arnott stove, with a current of fresh air directed on it, placed in the hall or at the bottom of the staircase. This inlet of a gently warmed air is useful, not only by taking the excessive chill from the outer air, but also by affording such an influx into the house as supersedes those irregular draughts, which, for want of other supply, force their way through every chink, hole, and cranny in the floors or walls, and which, besides a chill, often bring with them dust and bad effluvia acquired in their passage from without. The extreme dryness of the air thus warmed may be removed by shallow earthen pans containing water, placed on the stove." (pp. 489-90.)

In large public buildings, where many persons are congregated, or where other causes of contamination or impurity operate, a greater ventilating force is required: and for this Dr. Arnott has devised a kind of pump, moved by steam, and propelling air in a precisely measured quantity and regulated temperature. A machine of this kind has been constructed in the Hospital for Consumption at Brompton. It "introduces into the building about 2,000 cubic feet of air per minute; which, passing over 600 square feet of surface heated by steam, supplies an abundant amount of fresh air, moderately warmed. The foul air escapes through valvular apertures in the chimneys of each room". (p. 491.)

In the conclusion of his remarks on air, Dr. Williams adverts to the necessity of preserving it from contaminating effluvia. Cleanliness, adequate drainage, and an abundant supply of water, are essential to the wholesomeness of a habitation. Lime and chlorine gas should be used as auxiliary means. For further information on the subject of sewerage, Dr. Williams refers the reader to the Report of the Sanitary Commissioners.

Bodily Exercise. Moderate and sustained exercise in the open air, provided the fatigue or exhaustion arising therefrom be removed by adequate rest and sustenance, excites and invigorates the functions of the body, and exerts a salutary influence on the structures. "The muscles especially, including the heart, manifest an increase of strength and firmness; the blood-vessels are improved in tone, by which they distribute and equalize the flow of blood through them, and prevent partial congestions and obstructions; and the blood, actively carried through the organs and textures, undergoes complete series of changes from nutrition, purification, and arterialization, by which its integrity is maintained, and it is adapted in its turn to sustain the several functions of the body. The appetite, the digestive powers, the intestinal action, the warmth of the surface and extremities, the spirits and temper, are generally all improved by the habit of regular exercise; and what can we say more to recommend any hygienic agent"? (p. 493.) Dr. Williams next indicates a few cautions and directions as to the manner in which exercise should be adapted, in kind, time, and degree, to the strength, habits, occupation, age, sex, and other circumstances of the individual. In childhood, youth, and early maturity, active exercise, of short duration, and followed by repose, is suitable and salutary; while in adult age, prolonged exertion is better borne than exercise requiring great agility of movement. It does not, however, follow that the exercise of adult persons should be monotonous or slow. Persons much engaged in sedentary occupations should employ the hour or two they can spare for out-of-door exercise, in brisk walking in the country, alternated with an inspiriting ride, or with active gardening, or the like pursuit. More violent exertion, as dancing, cricket, rowing, or hunting, is, on the other hand, likely to be injurious to such persons; they encounter a perpetual risk of breaking down under the unusual

strain to which they subject their frame, and they gain none of that gradually renovating and invigorating influence which is produced by more moderate exercise regularly practised, although varied from day to day. In old age more caution is requisite ; and the more so if a man have previously lived a sedentary life, and become stiff and prematurely old. A greater amount of exercise may be permitted to those who, "by a temperate and judicious mode of living, with habits of activity proportioned to the strength and age, have economized their vigour, and given fair play to their constitutional powers. These may be said to enjoy a green old age, in which a capacity for moderate exercise continues to be not less a source of recreation and comfort, than a means of sustaining health : but even these fine and in all respects venerable specimens of ameliorated humanity sometimes need professional warnings, against presuming too much on their well-husbanded strength. They are often carried off by acute attacks, which have been brought on by their stepping out of their sphere of safety, which, although wider than usual at their age, has nevertheless limits, which the steady hand of time is daily narrowing, but in so gradual and imperceptible a manner as to escape the attention of their own mental powers, now also on the wane. Hence one act of imprudence may be followed by fatal results ; and that may be deemed to be imprudent which in any material degree exceeds the bounds of the accustomed habits". (p. 495.) Some instructive remarks follow, on the most salutary times for exercise ; they are commonly those in which the bodily powers are not too much depressed, nor oppressed by the process of digestion. The time must vary according to the strength, occupations, or other circumstances. The section concludes with some remarks on the various effects of the different kinds of exercise.

Mental Occupation, like bodily exercise, should be moderate and equable, with some variety of excitement and relaxation ; and must vary, in kind and amount, according to the different circumstances of age, sex, temperament, capacity, and habits of the subjects. This subject is an extensive one ; yet the concise, practical remarks made by Dr. Williams are replete with instruction. He strongly objects to any attempts to concentrate the attention of children too long on any one thing, whether amusement or intellectual instruction ; such attempts bring on exhaustion, fretfulness, bodily suffering, and, not unfrequently, disease ; and too early or prolonged attempts to educate the mind, "anticipate the period at which the power of concentration or sustained attention is acquired, which it can be safely only by time and practice". In ripening youth, a leading rule to be observed is, to educate all the powers of the mind equally, exercising the weaker powers, and judiciously restraining those which unduly predominate. "Herein education includes not the mere communication of knowledge, but the discipline of the heart and mind ; the subjugation of evil and useless inclinations and propensities, and the direction of the attention or activity of the intellect to objects that are profitable and improving. The influences by the aid of which this discipline may be exercised are manifold, and must in some degree vary with the age and with the character of the individual. In childhood, respect and love towards parents or others exercising authority ; in youth, the same feelings confirmed and cultivated by the convictions of the understanding now giving increased spontaneity of thought to the individual ; and, in all ages, the constraining and elevating influence of religion, in supplying the highest motives and rules for the conduct of thinking and responsible beings ; these are the great leading instruments through which mental discipline is safely and effectually applied. But other and less dignified motives are often equally powerful, such as vanity, pride, ambition, rivalry, and the like ; and although they prove the failing of the human mind from a standard of perfection, and, unless controlled, may become exaggerated into vice, yet, under restraint, they may be usefully enlisted on the side of mental improvement." (p. 499.) In adult age, the discipline and culture of the mind (which are

objects of education) are still to be carried on with activity. Many difficulties beset all—especially beginners—in their attempts to control their more turbulent moral and mental dispositions, to cultivate the more gentle and calming feelings, and to apply their intellectual powers to worthy objects. But the advantages are so obvious, that the efforts should be proportioned to the difficulties: "and with the full and rational exercise of human means, but with humble and faithful dependence on more than human guidance and strength, these efforts will never prove unsuccessful". The injurious effects of undue or prolonged occupation of the mind are thus pointed out:—"It abstracts the supply of blood and of vital energies from the bodily functions: these suffer and fall into weakness and disorder, whilst the nervous system, the material organ of the mind, is ultimately exhausted by the continued excitement, and refuses to perform one of its manifold functions; hence stupor, paralysis, or organic weakness of some kind may ensue; or others may retain a morbid erethism or irritation in the midst of general weakness; and delirium, spectral illusions, sleeplessness, tremors, spasmodic or painful affections may be the consequence". (p. 500.) Mental idleness not only weakens the intellect, but tends to degrade the body and its proper functions, by inducing habits of indolence and self-indulgence. Moderate and well-timed bodily exercise, and pleasing mental impressions, are advantageous in giving to the faculties that renascent energy which is well expressed by the term *recreation*. Variations in the kind of mental occupation, as by music, drawing, amusing games, light reading, or alterations of intellectual tastes, are often more effectual than absolute rest in refreshing the mind. Analogous rules may be applied to the moral emotions, so far as they are under the direction of the individual; and a natural tendency to an alternation of high and low spirits is observed in some persons.

Sleep is next considered with regard to its effects and nature, its symptoms, the circumstances which promote it, the evil consequences of the want of it, means of inducing it, and amount of sleep proper, according to age, sex, strength, etc. Dr. Williams gives the following directions: "The loss of rest is so seriously detrimental to health, that to prevent it by hygienic means is of great importance; and besides avoiding, so far as possible, the several causes of wakefulness just specified, bad sleepers should take heed to attend to the following directions for their regimen, rather than resort too hastily to hypnotic drugs, which, although sometimes useful and necessary as temporary expedients, lose their effect by habitual use, and produce other evil consequences which render their continuance improper. Bad sleepers should make a practice of early rising: it may cost them some trial of strength at first; but if they would improve their sleep, they should seek it at the natural time, and not late in the morning, when the excitements of the day begin. Their hours of meals and exercise should also be early and most regular, both in order to promote that state of health most conducive to ease and freedom from suffering, and also to secure the accomplishment of the processes of digestion and consequent excretion or eructation before night, which is the proper period for repose. Exercise should be used as freely in the open air as the strength will permit, without causing lasting fatigue; and if the strength do not bear walking or riding, driving or sitting out in the open air several hours in the day is an efficient means of promoting sleep, by gradually and gently fatiguing the senses by the operation of light, air, and sound, whilst the organic energies are refreshed and invigorated by their salutary influence. As the hour of retirement for rest approaches, every description of exciting agency should be avoided. The latest meal should be taken at least an hour before bed-time, and tea, coffee, and all vegetable matters apt to generate gas, should be excluded from it. Weak persons, and others under the influence of fatigue, may often advantageously take a little wine or alcoholic mixture at this meal; its operation, which counteracts the exhaustion and nervous excitement induced by weakness,

being composing and hypnotic. All active exertion of body or mind should be carefully avoided at this time. Subjects of conversation or reading should be commonplace or tranquillizing, neither requiring much attention, nor exciting to the feelings or imaginstion. The very preparation of undressing should be simplified as much as possible, and all superfluous items or general washing, etc. should be postponed until the following morning. Much might be said about the construction of the bed and its appendages, and the posture best suited for tranquil repose; but this is not the place for such details, which may be comprised in the general direction that all is to be made as comfortable as possible, without relaxing by excessive softness or abundance of covering." (pp. 504-505.) He does not seem to have much faith in the efficacy of various expedients for inducing sleep by repeating lines of poetry, counting numbers, etc. The best of these methods appears to be that of attempting to imitate the breathing of a person during sleep; but it frequently happens with this, as with all similar attempts to procure sleep, that the continuance of the effort breaks the spell by exciting the attention. With regard to the amount of sleep required at different ages, Dr. Williams observes: "Infants pass the greater part of the day as well as the night in sleep; and children, up to the age of six years, generally require at least twelve hours of repose, besides an hour or more in the middle of the day. At about this age, the sleep at noon may be discontinued, but the night sleep can hardly be abridged with advantage, until about the tenth year, and then only to a moderate extent, until the period of puberty, after which it is generally proper gradually to reduce the period of rest to nine or ten hours; and no further diminution is expedient until the cessation of growth, when another hour or two may be taken from it. The average amount of daily sleep beneficial in adult and middle ages, may be stated at eight hours. In more advanced life this extent of sleep is not less serviceable where it can be procured; but at this period the capacity for sleep usually diminishes, and wakefulness or disturbed sleep is a common complaint of old age. Attention to the precautions before recommended will however often restore it; and even if they do not sleep, aged persons require an increased period of time in bed, for the sake of warmth and rest, which their reduced calorific and muscular powers render more necessary." (p. 506.)

Females require more sleep than males, especially during pregnancy and lactation, to assist the supplementary nutritive processes. Persons convalescent from acute diseases, or otherwise weakened, require more sleep, which may even be procured by artificial means. The injurious effects of too much sleep are—a slackening of the circulation, a diminution of excretion and muscular nutrition, and the production of general plethora, or partial congestions, or of fat in those predisposed to it. The muscular and sensorial functions are weakened, while the medullary function acquires an undue ascendancy; hence arise spasmodic disorders, hysteria, or even epilepsy. The period of sleep should always be made to correspond, as nearly as possible, to the night; hence it is advisable that even adults should retire to rest, in summer especially, as many hours before midnight as can be spared after night closes, that they may be able to rise at or as soon after sunrise as they have had their proper complement of sleep. The usages of society and business of life often interfere with early retiring to rest; yet "the compromise of retiring one hour before midnight should be enjoined for the sake of health, and accompanied by an exhortation to early rising, enforced by a description of the refreshing and invigorating influences of the morning air, with its exhilarating concomitants of light and sounds."

The absolute necessity of a due performance of the process of Excretion is obvious from the fact, that its failure often leads to disease. As it depends on the activity of the processes of circulation, respiration, muscular contraction, and sensation, many of the hygienic measures which contribute to sustain these various processes are likewise efficient in promoting that of excretion.

"Thus, a proper regulation of *food*, solid and liquid, and a regular use of *exercise*, are important means of procuring all the excretions; and the functions of the skin and kidneys, and, in a less degree, those of the liver and intestines, also, are influenced by *clothing*, *temperature*, *air* and *sleep*."

The regular action of the *intestines* is promoted by no circumstance more than by the punctual habit of devoting a fixed and sufficient time to the evacuation. In habitually costive persons Dr. Williams prefers pressure or friction downwards, in the direction of the sigmoid flexure, to the use of enemata. Other means are serviceable, such as "the use of brown or rye bread, instead of white; taking at night oatmeal porridge, ervalenta or lentils, white mustard seed, stewed prunes, tamarinds, baked apples, and the like; all of which act by adding either a mechanical or a chemical irritant to the fæculent mass, and may prove objectionable by irritating too much, and otherwise disordering the alimentary canal. The same objection applies to the addition of toasted bacon to breakfast, and that of a quantity of fruit to dinner. A more harmless, and sometimes more efficacious expedient, is that of drinking a large draught of cold spring water at first rising, which is useful for other purposes likewise. With some persons, malt liquors promote the action of the bowels. A walk before breakfast for the more robust, or a walk or ride immediately after that meal for others, often contributes to the same end; and in some instances such exertions as particularly bring into action the abdominal and other muscles of the trunk, such as digging, or other occupations in gardening, prove more effectual." (pp. 509-10.) The habitual use of gentle aperient medicines should be avoided if possible; but if it be unavoidable, a daily pill is the most preferable means. Aloes and rhubarb are the best remedies, as they combine somewhat of a tonic with their aperient action. "Aloes," says Dr. Williams, "is the most efficacious aperient, and, if properly managed, does not lose its effects, even after many years of daily use. I know of an instance in which it was continued for fifty-seven years with unquestionably beneficial results; and the individual, in spite of very sedentary habits, retained uncommon vigour of body and mind until within a year of his death, which occurred at the age of eighty-seven. By far the best mode of administering aloes as an habitual aperient, is in combination with a little mastich, and made into a mass with alcohol, which renders the pill less soluble in the stomach, and therefore more capable of acting on the lower part of the canal. The combination which I commonly use, consists of three parts of socotrine aloes, with one of mastich powder, made into a mass with alcohol; two or three grains of this are to be taken at dinner or bed time daily. This pill has no tendency to excite hæmorrhoids, provided an occasional dose of blue bill be taken to promote a sufficient action of the liver. In several instances I have found it operate more comfortably on joining with it a few grains of inspissated ox-gall. In weakly persons, a grain of sulphate of iron or quinine may be added with advantage." (pp. 510-11.)

The free excretion of *urine* is promoted by draughts of water, with moderate exercise, short of causing free perspiration. Gardening and trotting on horseback augment the secretion of the kidneys, and may be recommended to those troubled with lithuria. In gouty and rheumatic subjects, such exercise appears to promote the elimination of solid matter, as well as of water. Diuretic beverages excite for the time, but are liable to leave the secreting power exhausted afterwards; as temporary means, however, they are useful. The regular evacuation of the bladder depends much on the sensations excited in various degrees in different individuals; and when circumstances interfere with obeying the natural impulse, its urgency may be diminished by limiting the amount of fluids taken, and promoting the cutaneous excretion by warm clothing and external warmth.

The uses of the *perspiratory* secretion are recognized "in evacuating from the superficial vessels superfluous water, acid, and oily matter, under the dis-

tending or exciting influence of prolonged heat or exertion; in tending by its evaporation to cool the surface thus heated, and by its relaxing effect on the tissues to remove the irritation of distension or obstruction; and by the same softening operation to render the skin more pervious to the chemical action of the air on the blood, and to the vital influences reciprocated between the blood and the tissues." (p. 512.) In addition to these, the discovery of Landerer that urea is eliminated by the skin, adds not a little to the importance of this excretion. Besides the hygienic means formerly mentioned as promoting the perspiratory function, Dr. Williams notices bathing, washing, and friction. Warm bathing is most beneficial when used occasionally; or the whole surface may be daily washed by tepid sponging or shower-bath, followed by friction: these are highly salutary means of keeping the skin in an active and free condition, well suited to persons of languid circulation. "But, in the majority of healthy subjects, this object is better obtained by cold washing, and in the robust, even by cold bathing, in shower or plunge, which indirectly excites the functions of the skin by constricting its vessels, and thus throwing the blood on internal organs; and, by impression on the incident nerves, causes the excitement of reaction, which soon restores the superficial circulation in redoubled force, with its concomitant redness and glow. This reaction is much promoted by vigorous friction of the whole surface with coarse towels or horse-hair gloves, and this operates not only by stimulating the cutaneous vessels and glands, but also by the muscular exertion exciting the heart to stronger and more frequent contractions; for the same reason, other exercise, as in a brisk walk, is often useful. If, after cold bathing, the reaction is incomplete, and the skin remains pallid, chilly, and contracted, it may be inferred that the cold has been too long applied, and has permanently impaired the functions of the skin, and left the internal organs more or less congested. Or if, after complete reaction, an unpleasant fatigue, languor, chilliness, headache, or other uncomfortable sensation remain, it is a proof that the cold and subsequent reaction have been too depressing or exhausting; in either of these cases, tepid bathing or washing is to be preferred." (p. 513.) The vapour-bath, with shampooing and various aromatic and stimulant applications, though very useful in some cases of disease, is too exciting and exhausting to be recommended as a general means of preserving health.

An Appendix follows, containing the results of some researches by Dr. Garrod and Mr. Palmer on the Pathology of Gout and Rheumatism; a summary of Dr. Garrod's observations on The Causes and Treatment of Scurvy; and some observations on the Use of Chloroform.

The lengthened analysis we have given of Dr. Williams' *Principles of Medicine* will, we trust, clearly prove to our readers his perfect competency for the task he has undertaken—that of imparting to the student, as well as to the more experienced practitioner, a knowledge of those general principles of pathology, on which alone a correct practice can be founded. The absolute necessity of such a work must be evident to all, who pretend to more than mere empiricism; and we cannot more forcibly illustrate this point, than by quoting some portions of the remarks contained in his Introductory Lecture "On the Need of Principles in Medicine," which he has appended to the present edition of his Principles.

"As anatomy and physiology, with chemistry, are the studies preparatory to medicine, one might expect that they should be made fundamental to that of medicine; that, starting from the knowledge of the healthy body, as taught by them, the transition should be easy and intelligible to disease —first, in its lowest degrees and simplest form; then to the more compound, pronounced, and more removed from, but still comparable with, the healthy standard. Instead of this, lecturers and writers plunge at once into the mazy thickets of inflammation and fever—subjects so complicated,

so changed from anything taught by previous study, that anatomy and physiology afford little help: and no wonder that the student (like many observers and reasoners on the same topics) becomes confused and bewildered in the complexity of the subject; or, if he do make out anything, it is something isolated, abstract, about fever or inflammation itself, without its natural relations to health and to other diseases.

"This plan of proceeding may be compared to a person beginning the study of mechanics with the steam-engine; or to the student of chemistry commencing with organic matter.

"The general result is, that where any distinct notion of disease is acquired, it is one not at all founded on previous physiological knowledge, but it is a new idea of disease as an absolute, separate thing—not a mere condition consisting of altered function and structure, but a being, the character and history of which are to be detailed like that of a plant or an animal. And when special diseases are treated of, the same individualizing process is pursued through all the jargon of the schools. Each has its nosology, classification, and definition; its predisposing, exciting, and proximate causes; its theory, *ratio symptomatum:* its diagnosis, prognosis, indications of cure, fulfilment of these, *juvantia et lædentia*, and prophylaxis!

"With all this formidable array to each disease, the practice of physic was an arduous study in the days of Cullen. What must it be now, when the diseases of Cullen's nosology have been almost doubled, and the facts relating to them have been more than doubled?

"But let us follow the student, well crammed with his nosological list, their definitions, &c., to the bedside. Let us see how his knowledge, so meritoriously obtained, will serve him in the hour of need. In a few cases fully developed and well marked acute diseases, such as pleurisy, scarlet-fever, or rheumatism, he may get on pretty well; but in the commoner description of cases, acute or chronic, in their early stages, in their endless variations from peculiarities of constitution or from complicating causes, he finds himself continually puzzled: the phenomena do not correspond with any of his defined diseases; they frequently change their character in a way that he cannot account for; his prognosis is falsified; his diagnosis fails; and his treatment, although not always unsuccessful, does not answer according to his expectations; some patients recovering whom he expected to die; others dying, or not improving, whom he expected to recover.

"Disappointed in the failure of his nosological learning, the young practitioner more and more mistrusts it, and falls into a routine of empirical practice. Without troubling his head about the name or nature of diseases, he thinks solely of their treatment; and, begrudging the time that he spent with books and lectures, he decries every thing that is not practical.

"Still he is obliged to retain some notions of the theory of disease; but they are general notions, and not fettered by definitions. He still studies symptoms: he seeks in the pulse and heat of skin indications of fever and inflammation; he looks to the tongue and alvine evacuations for proofs of disorder of the digestive organs; he judges by the complexion and muscular strength the state of the constitution. Instead of troublesome scholastic definitions, he uses convenient, general terms, which may be taken in a pretty vague sense—such as irritation, congestion, constitutional weakness, cachexia, disordered digestive organs, scrofula, scorbutic habit, and the like: and his remedial measures are designated in the same convenient general terms—such as soothing, cooling, supporting, stimulating, alterative, purifying, etc. In short, he has, in practice, learned himself, in a loose way, at the expense of previous studies, and sometimes, it is to be feared, at the expense of some bad practice, what he ought to have been properly taught as the foundation of his studies—*general pathology.* Thus we are led to the presumption, that general pathology is the proper basis for practical medicine; and I venture to affirm, that a chief reason why the practice of medicine has been commonly

so distateful, and so difficult in its study, and so unsatisfactory when tested at the bed-side, is, because its foundation, *general pathology*, has not been efficiently taught." (pp. 521-23.)

So long as anatomy, physiology, and the allied sciences, had not attained a sufficient degree of development to be rationally applied to the investigation of disease, the state of medical practice which Dr. Williams has, with equal force and truth, described, was excusable. Our knowledge of pathology is indeed imperfect;—much remains to be done, and many of the opinions which have been advanced will require modification. But no excuse remains for him, who, rather than be guided by the light held before him, would rather wander in darkness in the forest of empiricism, and who would be so far forgetful of the duty he owes to his fellow-men, as to retard the improvement of that profession, whose end is the good of mankind. Experience, without pathology, may, after length of years, make a passably successful practitioner; but even then, his failures, when divested of the screen spread over them by age and the name of experience, only tend to show the insecurity of the foundation (if indeed there be any) of his practice.

"But the benefit of such experience is gained at the commencement by the student of pathology. He has learnt to trace symptoms to their causes. Having been taught, by anatomy, the peculiarities of the circulation in the head—and by physiology, confirmed by clinical observation, that this circulation may be similarly impeded by opposite causes, inanition as well as fulness, he is prepared to find out, through other symptoms, which is the cause of the headache in the case before him; and he adapts his remedies accordingly.

"In fact, a true pathology, or sound principles of medicine, is the embodiment of the results of experience in disease, with a knowledge of structure and function in health. It is the only connecting link between the preparatory sciences and practical medicine. *Without* it, these are *disjecta membra; with* it, they form a connected body of science—young yet, it is true, and falling short of the objects of the art, but already available for much, and needing only the growth and continued support of its chief members, especially anatomy, physiology, and clinical observation, to become the perfect and efficient director of practical medicine.

"The great proof of the practical utility of general pathology is, the aid which it gives in the study of clinical medicine, and the light which clinical medicine continually throws on it. The states which the practitioner has to treat are often too indefinite or too mixed to correspond with any of the definitions of special disease. They frequently consist of functional disorder, varying with time and circumstance, or changing its place, so as to present no fixed characters. But, compared by the pathologist with the standard of health, and analyzed from their complexity, their nature becomes intelligible, and their proper treatment obvious, so far as means are possessed to counteract or control that which is wrong." (pp. 523-24.) Dr. Williams illustrates this position by examples: and we quote his remarks on *hysteria*. "What confusion in diagnosis, as well as in practice, has arisen from comprehending, under the specific name *hysteria*, the most opposite and most varying conditions, merely because they are consorted with some nervous phenomena; so that this word becomes almost synonymous with *female diseases*. But, pathologically considered, the confusion in diagnosis, and, in some measure, the perplexity in regard to treatment, cease. In one group of such cases, the pathologist finds really such signs of disordered *uterine* function as would justify the name; other symptoms, however varied, taking their origin from this disorder; and he thus discovers the necessity of directing the treatment to this cause. In another group, again, he finds the uterine function impaired; but this only in common with other functions: and all this in consequence of a *want of blood*

throughout the body, which want is denoted by the waxy complexion, the pallid lips and gums, the loose yet easily quickened pulse, the panting breath, and the feeble limbs. Here, the restoration of the blood is the obvious indication; and, in proportion as this is effected, the symptoms of nervousness, debility, and loss of function, disappear. In a third group of cases, called hysterical, the pathologist discovers the opposite condition, that of *sanguineous plethora*, which, independently of any disorder of the uterus, causes trouble, sometimes in one part, sometimes in another, but especially in the nervous system, which, in most females, is peculiarly liable to disorder. Here, too, he is led to the most appropriate treatment." (pp. 524-25.)

We must conclude, by again expressing our high sense of the immense benefit which Dr. Williams has conferred on medicine by the publication of this work. There are points on which the opinions of Dr. Williams may require modification in subsequent editions; yet we are certain that, in the present state of our knowledge, his *Principles of Medicine* could not possibly be surpassed. While we regret the loss which many of the rising generation of practitioners have sustained, by his resignation of the chair at University College, it is comforting to feel, that his writings must long continue to exert a powerful influence on the practice of that profession, for the improvement of which he has so assiduously and successfully laboured, and in which he holds so distinguished a position.

On the Logical Applications of Physiology to Pathology: a Lecture, Introductory to the Course on the Principles and Practice of Medicine. Delivered at University College; by Professor Walshe, M.D. 1849.

Dr. Walshe is an able man: but we think he might have exercised his abilities more usefully, than in the composition of the Introductory Discourse before us. The following sentence, which occurs near the commencement, in some degree prepared us for the sequel. "I need scarcely remind you, that in our science, First Principles are utterly unattainable: for the counterpart of the Gravitation of the Natural Philosopher, the Pathologist may sigh in vain." This, we suppose, is intended as a declaration of war against the doctrines taught by his predecessor; and of the truth of which, we have repeatedly declared our conviction.

Dr. Walshe asserts the independence of Pathology on all other sciences, and devotes most of his Lecture to the refutation of an apophthegm, said by him to have become a household phrase in medical circles—that "all Pathology is based on Physiology." We have no idea to whom Dr. Walshe refers as having enunciated such an absurd dogma as this appears to be; but indeed the phrase evidently bears a double meaning. If it be asserted by any, that Pathology is founded on Physiology *alone*, then the doctrine assumes a form in which it will be repudiated by every Physiologist and scientific physician, especially by those who have laboured hard to establish First Principles in Medicine. But if it be merely meant, that Physiology is *one* of the sciences on which Pathology is founded, then it is superfluous in Dr. Walshe to "refuse to recognize as the *true formative material* of the science of Pathology, (that is, the sum of classified laws of diseased actions,) inferences deducible, prior to experience, from current notions, (whether possible, probable, likely, very likely, or certain,) held concerning the natural texture and healthy actions of the frame"; to deny that Physiology (physical, chemical, or vital) is the basis of Pathology, in the sense that acquaintance with the one secures by involution acquaintance with the other"; and to deny that "Physiology is the basis of Pathology, in the sense that,—given the recognized healthy life of an organ, the consequences of the derangement of that life can, by any forms of reasoning, inductive, deductive, analogical, or other, be positively predicated prior to actual experience of their character and habitudes."

What is the Physiology of which Dr. Walshe has taken such pains to show

the worthlessness? It seems to be merely the transcendental or speculative department of the science, which he sets up as Physiology itself. We quite agree with him, that wild speculations, even though they be physiological, are not safe material from which to construct pathological generalizations. We acknowledge the failure of such physiology in announcing the conditions and effects of various infractions of hygienic rules, because observation was not called to its aid and direction: we admit the purely hypothetical character of such speculations as the hyper-oxidation theory of Liebig in phthisis; but we assert, that no other legitimate inference can be drawn from such instances than that *speculative* Physiology is an unsafe guide. But Physiology is an inductive science; it is pre-eminently a science founded on the observation and generalization of facts. From examination of the structure and arrangement of the several parts of the body, from experiments on animals, and from clinical observation, it derives its most valuable conclusions. Dr. Walshe objects, that Physiology often assumes to itself the merit of establishing pathological facts and doctrines; and maintains that experiments on animals are pathological researches. Pathological phenomena are, undoubtedly, produced by such experiments, as well as by disease: but from these phenomena we derive our knowledge of the healthy function (the Physiology) of the affected organ. In this consists the value of the physiological experiments of John Reid, to whom both Physiology and Pathology are under deep obligations. And conversely, from a knowledge of the functions of the body in health, we can predict the conditions of Pathology to an extent much greater than Dr. Walshe supposes, when he says that "the what, the when, the how, the how long, the what for, and the where to, are all matters belonging to the province of experience alone." For instance, we can, from a knowledge of the structure and functions of the central organ of circulation, pretty correctly predict, what will be the pathological effect of lesion of any of its valves, how and why it occurs, and to what it will tend. Our knowledge of Physiology is as yet imperfect; but so far as its doctrines are established, they are invaluable guides in the discernment and treatment of disease. Physiologists themselves do not pretend to do more than contribute their portion of aid to the investigation of pathological phenomena. But as long as Physiology is imperfect on any point, Pathology must remain in a corresponding condition. Numbers of illustrations of this might be pointed out. The two sciences are intimately connected—it is impossible to disconnect them. To use the words of Dr. Carpenter, "the science of Pathology has so direct and immediate a dependence on that of Physiology, that the former cannot be pursued, with a fair prospect of success, without a knowledge both of the principles and of the chief phenomena of the latter." Physiology, then, supplies facts as valuable as clinical observation can produce, on which to found the science of medicine—we mean Pathology and Therapeutics, as they ought to be taught to students, and as they ought to be carried out in practice.

We do not uphold Physiology as *the* basis of Pathology; and we recognize the absolute necessity of clinical observations. The following extract from Dr. Williams's Introductory Lecture, to which we have referred at p. 1018, expresses ideas of the truth of which we have had the good fortune to become early convinced. "It is not a partial set of opinions, erected on *one* only of the many pediments of fact, on which the science of medicine should stand. Healthy anatomy, physiology, physics, chemistry, the study of clinical medicine, that of materia medica, morbid anatomy, neither of these *alone* can furnish a foundation for Pathology—that foundation must be formed by ALL—the facts which all supply, constitute the material of which it is built; and the general facts or laws of all must be brought to bear on the arrangement of these materials in the construction of a system of Pathology."

Time and space alike prevent our enlarging upon various topics which we had noted for remark. In conclusion, we would just add, that it is chiefly because we appreciate the value of much of what Dr. Walshe has done for

medicine, and because we know that, in virtue of these labours, his name must carry weight, that we have thought it our duty to record a protest against this manifesto, first promulgated orally, in an Introductory Lecture at University College, then in the columns of the *Medical Times*, and lastly, as a separate pamphlet. We think it is calculated to give narrow conceptions, and a wrong bias to youthful minds.

THE HARVEIAN ORATION DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS. By JOHN CARR BADDELEY, M.D. Cantab. pp. 20. London: 1849.

It is ordained in the Will of Harvey, that the annual Oration founded by him should be composed in Latin. This, to many of the orators, is, perhaps, a fortunate circumstance; for tame ideas, rolled out in the measured periods of the ancient language, sound better, than if framed in the vernacular. Moreover, compliments bordering on the high-flown can be addressed to individuals present, without submitting their modesty to that trial, which could scarcely be avoided, were the same sentiments expressed in familiar Saxon.

Dr. Baddeley has, as in duty bound, passed in review the chief ornaments of the medical profession, and has without bigotry included in his catalogue of the great, Jenner, and other illustrious men whom the College neglected during life. Of all in his list, the learned orator speaks in glowing terms; and of none more touchingly, or more eloquently, than of the venerable physician who now occupies the President's chair. We can imagine that illustrious doctor when thus fervidly addressed:

> "PARIS, ut salvus regnet, vivatque beatus;"

gently whispering in the same classic tongue,

> "Non omnis moriar .... usque ego postera
> Crescam laude recens."

To be serious, we hope that the time may yet arrive, when STERLING MERIT will be the honourable and only key able to unlock the jealous portals of the Royal College in Pall Mall. Were a kinder and juster policy now to be adopted, the past would be forgiven; and we should not have men, like Sir James Clark, in the highest places of the profession, positively refusing the Fellowship.

DISSERTATION UPON DISLOCATIONS AND FRACTURES OF THE CLAVICLE AND SHOULDER JOINT, being the Jacksonian Prize Essay for 1846. By THOMAS CALLAWAY, F.R.C.S., pp. 178. London: 1849.

This work is creditable to the author; and displays much care in its production.

The subjects treated of are Fractures and Dislocations of the Clavicle; Fractures of the Scapula; Dislocation of the Shoulder Joint; Fractures of the Head of the Humerus; and Injuries to the Longer Head of the Biceps.

Mr. CALLAWAY is of opinion, that the accident usually described as a partial dislocation of the humerus forwards, is the result either of dislocation or rupture of the longer head of the biceps. In such cases, he thinks, little can be done in the way of treatment. He considers that it is impossible to bring it back to its true position, and that much mischief might arise from attempts to do so; he states, that he would elevate the shoulder and direct the patient to flex and extend the forearm, at the same time rotating the Humerus, and then advise warm fomentations and perfect rest; and, at the end of a fortnight or three weeks, employ passive motion. There are few injuries more unsatisfactory than the one in question; and the above treatment is, perhaps, as good as any which can be devised. Mr. Callaway gives a well-drawn illustration of the appearance of an arm, in which rupture of the tendon has taken place.

GOUT: ITS HISTORY, ITS CAUSES, AND ITS CURE. By WILLIAM GAIRDNER, M.D. pp. 232. London: 1849.

DR. GAIRDNER has evidently thought much, and with some profit, upon the subject of his treatise. His opinions are entitled to respect, as they obviously proceed from an honest, earnest, and accomplished inquirer. As to their soundness, there must of necessity be more or less difference of opinion.

The author does not offer his book as a complete treatise on Gout: he confines himself to the purer type of the disease, and does not touch upon what, we must say, is a very important, if not an essential part of the subject, viz., what the author terms "the complication with rheumatism", but which we would prefer speaking of as the *relationship*, real or supposed, which exists between Gout and Rheumatism. "I do not think it necessary", says Dr. Gairdner, "even to allude to those opinions, chiefly prevalent in France, and founded on one or two remarkable symptoms, which would confound Gout and Rheumatism as one disease. By such reasoning, medicine might be made very simple in its doctrines, at the expense of great instability as a science, and much uncertainty as an art." This summary repudiation of the affinity between Gout and Rheumatism has saved the author a great deal of trouble, because he could not have made good the assertion, without entering upon discussions of considerable extent. The abrupt dismissal of the controversy is not, however, satisfactory to the practical reader, who must feel anxious, we think, to learn from Dr. Gairdner his simple method of differential diagnosis between the two diseases, and likewise to receive an explanation of the fact, that notwithstanding the coincidence and similarity in many of the symptoms, and in many of the remedies, there should nevertheless be only an accidental likeness, and no real relationship between, the two diseases. Far be it from us to maintain, that Gout and Rheumatism are identical; but we think it is most important in practice, to bear in mind that they are cognate affections.

Dr. Gairdner does not believe in the idea of a poison, or morbific matter, operating in a way peculiar to itself; and, so far as the phraseology is concerned, we have no objection to admit that, very probably, it is hardly accurate. The fact is this, however,—a something exists in certain individuals, which may either originate in their dietetic and other hygienic errors, or may be transmitted to them from their progenitors, which influences, in a mysterious,and as yet wholly unexplained manner, the bio-chemical changes essential to health. This influence, or as some call it, this morbid poison, may be counteracted, or its operations kept within certain limits, so that gouty symptoms may be kept in abeyance, or entirely prevented. This general statement is not a speculation, but an expression of undeniable and ascertained facts: and we think that it is only in this way that Gout can be truly considered as a poison disease. By a perversion of the healthful bio-chemical changes, there takes place within the blood an excessive production of poisonous matters, of which uric acid seems to be one of the most important: and it is clear, that if the eliminating organs be not sufficient to get rid of these morbid substances, toxæmic symptoms must arise. The phenomena known under the popular names of Gout and Rheumatism are known to be connected with an excess of uric acid in the blood; and, in considering the pathology and treatment of these diseases, it is most important to remember, that during the progress of, and in the convalescence from certain fevers, (when the eliminating organs seem to be too feeble to throw off from the blood the too rapidly formed uric acid and urea,) we have, very frequently, temporary rheumatic and arthritic affections. These considerations seem to point out the impropriety of disconnecting Gout and Rheumatism, either in theory or in practice, as both are essentially the result of an excessive formation of poison in the blood, and their imperfect elimination from it; and, in both, the indications of treatment are two-fold: viz. to prevent the formation of morbid matter by constitutional treatment, and to promote the removal of that already formed,

by such an administration of remedies, as will best promote elimination by the liver, kidneys, and other organs.

We have no great objection to the following paragraph, in which Dr. Gairdner sums up some of his ideas : " The real pathology of Gout appears then to me to be comprised under these heads,—an increased pressure of the blood, from its accumulation in the great veins, and an altered state of that fluid leading to the formation of uric acid instead of urea ; these results being dependent on too copious an assimilation of nutriment, on defective respiration, and on more or less suppression of the healthy evacuations from the liver, the kidneys, and the skin." (pp. 145-6.)

For the various interesting remarks and arguments connected with the chemical part of the subject, we must refer to the work of Dr. Gairdner ; simply observing, that his opinions are not in accordance with those generally adopted ; but that, nevertheless, they are not undeserving of attention.

We quite agree with Dr. Gairdner in thinking that more can be done for the Cure of Gout than is generally supposed. It is also our opinion that the greater part of the suffering from Gout which prevails, especially in the southern division of the United Kingdom, would cease, were the community to adopt a more abstemious regimen, and, in particular, to avoid overloading the system with excess of nutriment, especially with superabundant animal food, and fermented drinks. In Scotland, among tradesmen and working people, Gout is unknown ; whereas, among the same class in London and its suburbs, it is almost as commonly present as absent. Take any metropolitan district, and inquire into the health of persons not starving paupers, and it will be found that the proportion of those, who are more or less gouty, is quite extraordinary. Institute a similar search in Edinburgh, and, if you except tavern-keepers and gentlemen's butlers, you will hardly find a man who has Gout, excepting among the luxurious of the upper classes. Such facts being unquestionable, and on a great scale, point out pretty clearly that the most important part of the prophylaxis exists in dietetics. We are very far, however, from undervaluing the importance of certain medicines in the prevention, as well as in the cure, of the disease. It is not always to safe to make a rapid reformation in diet ; and when our patient is in the transition state, between full feeding and frugal fare, we have great faith in the benefit which may be derived from the occasional use, for a considerable time, of small doses of such medicines as guiacum, aconite, colchicum, acetate of potash, blue pill, compound squill pill, and various antacids. The method, the doses, and the combinations in which these medicines are necessary, as well as the propriety of using them at all, must depend on the special circumstances and progress of each case. We cannot concur with those who object to colchicum. It is a dangerous drug to play with ; but, when skilfully used, the advantages derived from it are both striking and permanent.

A few extracts from what is said regarding the Treatment will, we doubt not, be acceptable to our readers.

" Purgatives. While I would unhesitatingly and earnestly dissuade from the free use of drastic purgatives, I conceive it to be a great error to carry the dread of purging so far as was done by Sydenham. Laxatives are essential in Gout ; even when patients lead a most abstemious life, it is necessary that the bowels should be occasionally relieved by medicine. The effect of the disease is to lock up the secretions, and suppress the evacuations. This must be counteracted by laxative medicines, among other means. The frequency with which they must be administered varies in different cases.

" Much care is necessary in the selection of remedies. For some years past, I have made little use of the neutral salts as aperients in Gout. The profuse watery evacuations to which they give rise are, I think, injurious. The warm and even the more powerful vegetable aperients, such as senna, rhubarb, aloes, jalap, and scammony, seem to me far better adapted to the constitution of the gouty. They may be given with great advantage in the

form of tincture, and also associated with the warm aromatics and tonic bitters. These are the aperients I have long used in my practice, and I find much reason to be satisfied with the result.

"It is impossible to establish any rule concerning the dose. Each case of Gout is a separate study. The dose must be proportioned to the patient's degree of susceptibility. Yet there are some hints which may prove useful. The atonic forms of Gout require much more gentle handling than the regular disease; and persons with accumulated fat about the viscera of the abdomen, ask for stronger means than the spare and paunchless will bear. As the disease gives way, gentler and gentler remedies are required. At this period, indeed, it will often be found that the smallest doses of laxative medicine cannot be borne, and drastic purgatives may produce the serious accidents I have described in the history of the disease. In fact, as the paroxysm wears off, secretion returns; and the excreted fluids having found their way to their accustomed and natural channels, aperients become less necessary." (pp. 192-94.)

"Tonics have, in all ages, been used in Gout, and are recommended by most physicians. Even Sydenham, who treats other remedies with contempt, admits them among his means of cure. He gives a long receipt for an elaborate and complex posset, which would be very ungrateful to modern stomachs, though he talks of it as regaling to the senses. The chief tonics used by the older physicians are the snakeroot, sage, fenugreek, centaury, gentian, &c.; the latter alone being preserved in modern practice. If used at the subsidence of the fit, and accompanied by exercise and suitable diet, I am convinced that tonics have not been too much extolled—hardly even duly appreciated; but it is not at the close of the fit alone that they are useful. In all those forms of lingering and atonic Gout which affect the distant parts of the body with irregular and flying pains, the stronger tonics will be found useful and potent assistants to the warmer vegetable purgatives. Quinine, in doses of two grains, twice or even three times in the day, accompanied by a mild laxative at night, will very often succeed in restoring comfort. Dr. Giannini, of Milan, under a very false theory, made use of a plan somewhat similar with great success. The virtues of the celebrated Portland powder are probably to be referred to the same cause. I never saw this remedy used but once, and then without any good effect. I am unable, therefore, to speak in its praise; but I have no doubt that any good it has ever done may be accomplished by much simpler means.

"Tonics are chiefly useful in the later periods of Gout. In the last painful stage, iron will often be found a most important resource, unless there be signs of a strong tendency of blood to the head: this, however, is seldom the case at the close of an attack of Gout. There is a form of the disease chiefly seen in old people, which is manifested by swollen articulations of the hands, with slight derangement of stomach, faltering in the action of the heart, and intermission of the pulse, for which iron seems to me the best, if not the only, remedy. The forms in which I have chiefly used it are the saccharine carbonate of the *Edinburgh Pharmacopœia* (a most useful preparation), the citrate, and the tartrate. I have an objection to giving prescriptions in practical works in medicine, because each case has its own idiosyncrasy, which must be taken into account, and no intelligent practitioner will adopt the formulæ of another; but I am tempted on this occasion to say that, in such cases as those to which I have referred, five or ten grains of the above preparations, in any aromatic water, taken twice in the day, and followed occasionally at night by eight or twelve grains of extract of rhubarb, with one drachm of phosphate of soda, half an ounce of compound decoction of aloes, and an ounce of pimenta water, will often be found to suit the case well." (pp. 196-98.)

Colchicum. "There is no doubt that colchicum is one of those drugs, whose claim to be considered specific is well established. Its effect in freeing the body from disease bears no adequate relation to its immediate

visible and tangible, or, as it has been called, its physiological effect on the system. This, indeed, appears to be denied by Dr. Christison, who declares that he has never seen the full benefit of colchicum conferred, till it had produced griping, purging, or some disturbance of the *primæ viæ*. So far as Gout is concerned, I am quite sure this is an error. Colchicum never more effectually relieves the patient, than when it acts silently and peacefully, without producing any evacuation whatever, or in any way disturbing the his comfort and ease.

"The *modus operandi* of this remedy is not wholly involved in mystery. Dr. Douglas Maclagan, Professor Chelius, and Dr. Lewins have demonstrated that it causes a more copious discharge of urea from the system; and I have found, in repeated investigations, that the increase of urea was attended by a great diminution of the urates in the urine. The idea, therefore, which I have expressed in another part of this work, receives confirmation here. Urea and uric acid are again found to be correlative and vicarious substances.

"This effect of colchicum on the secretion of urine would seem to confirm the opinion of Dr. Holland, that 'it owes its virtue in the disease to a specific influence on this secretion.' But this is hurrying too fast to a conclusion. The connexion of vitiated urinary secretion with Gout is indeed very manifest, and it might, even *à priori*, be expected that a remedy which puts an end to the paroxysm should very powerfully affect the symptom in question in common with all others. I fear we are hardly yet prepared to explain the action of colchicum. Longer observation is necessary to solve this difficult problem; but I quite agree with Dr. Holland in the expectation that, from this source, a strong light may be shed on the pathology of the disease. I cannot, however, understand why he should deem it so improbable that the operation of colchicum should be through the nervous system. When I consider how much Gout is influenced by the condition of the nervous system, and that the most notable effect of colchicum, whether acting as a remedy or as a poison, is that of a narcotic; and when I further consider the great rapidity of its action, it appears to me probable that the nervous system will be found to be the principal channel through which this medicine exercises its powers. I cannot myself conceive any medicine capable of removing, in so short a time, all evidence of so much bodily disease and suffering, save one that acts immediately on the nervous system. By what means, indeed, colchicum restores the secretion of urea, and accomplishes that mutation of principles which I have ascribed to the influence of respiration, is a mystery which I cannot thoroughly penetrate. Yet even this appears to me to receive its most satisfactory explanation through the nervous system. I believe I have made it certain that the heart is enfeebled in Gout, and that its action is irregular and spasmodic. All practitioners know the value of narcotics in quelling this desultory action. May not some part of the great effect of colchicum, and of veratrum album, aconite, and opium (all which remedies may often be made coadjutors to, and sometimes substitutes for colchicum) be ascribed to their power of regulating the action of the heart, so as to induce a better and more even distribution of blood in both the systemic and pulmonic capillaries? But whatever degree of credit may be given to these speculations, it is undoubted that no sufficient explanation can yet be given of the action of colchicum: in other words, it must be classed among specifics.

"The cases to which colchicum is most applicable are, without doubt, those of the regular disease, without injury of organs. If there be injury of tissue so as to argue a destruction of function of any considerable portion of the kidney or liver, the relief to be obtained from colchicum will be problematical. The cases, too, of atonic Gout certainly receive less relief from this medicine, and some of them are so little influenced by it as by no means to compensate for the low and depressing feelings it often

creates. These effects may, however, be much obviated by combining it with warm aromatic tinctures and waters, and with the vegetable laxatives. The latter do not in the least destroy the specific action of colchicum, but, on the contrary, much promote it. I have often been obliged, in cases which received subsequent relief from colchicum, to renounce the use of the remedy till some defect in the general health, or some local disorder, had been attended to and relieved.

"But the most common reason of the failure of colchicum, is the unnecessarily large dose which is frequently administered. I have often seen quite a poisonous influence from doses carried to the length of producing sickness and diarrhœa. It is true, that this is not a cumulative poison, and that if the medicine be intermitted, the symptoms vanish quickly; but the effects of the narcotism induced often remain to such a degree, that the patient cannot return to the remedy without a reproduction of his painful symptoms, and its good effects are lost for a considerable time.

"I have said, that the incautious use of colchicum might aggravate the natural tendencies of the disease; and I feel well assured that many persons have suffered much from, and even paid the heavy forfeit of their lives to, the extreme readiness with which they fly to the relief which this remedy affords. Physicians may indeed dispute about the proximate cause and peccant matter of the disease, but surely no one will doubt for a moment that it has a cause; and it will be granted by most men, that the various painful symptoms by which the presence of the disease is manifested, constitute an effort by which Nature seeks to relieve herself from a malignant influence, and recover the equilibrium of health. In this sense the paradoxical expression of Mead, that 'the gout is the only cure of the gout,' contains a great truth. If this be the case, it must surely be apparent to the most careless reasoner, that it can neither be good philosophy nor good practice to use a means which should simply put a stop to a salutary process. Nature seeks a relief *quâ detur porta*, and the physician must not arrive only to forbid it, and to lock up the mischief.

"The first bad effect seen from too early an administration of colchicum, is that of a total failure of the remedy. The local disease is indeed relieved, but the distress of the patient is in no degree mitigated. His constitutional symptoms remain the same, and in no great length of time an explosion takes place in some other part, in all probability nearer the centre of the system. A metastasis has been effected; but the serious consequence is a prolonged disease; and a prolonged disease is often a great injury to the constitution.

"If, on the contrary, the disease be permitted to expend its first violence, colchicum may be both safely and effectually used. When the fever has abated, the œdematous swelling of the part been established, and the bowels well relieved, colchicum may be used with good effect and perfect safety. A long experience of the medicine now enables me, with great confidence, to recommend to younger practitioners to abate much the amount of the dose they use. I have seen doses of one drachm of the wine or tincture given twice and three times in the day, with no effect on the disease, but with sad disturbance of the patient's constitution; and I have seen the same cases led back gently and quickly to health with doses varying from ten to fifteen minims, after a little time had elapsed, and the fire of the disease was in some degree extinguished.

"If there be sufficient vigour of constitution to permit the practice of a small bleeding, according to the method I have already mentioned, colchicum may be used much sooner, and its administration will generally be attended with happier effects; but I have mostly found it prudent, as well as advantageous, to pause for a couple of days after bleeding before using colchicum." (pp. 201-7.)

It would be easy to multiply interesting extracts from Dr. Gardner's work, every part of which, indeed, will well repay perusal.

PRACTICAL TREATISE ON INFLAMMATION OF THE UTERUS AND ITS APPENDAGES; and on Ulceration and Induration of the Neck of the Uterus. By JAMES HENRY BENNET, M.D., Physician to the Western General Dispensary; formerly House-Physician (by *Concours*) to the Hospitals St. Louis, Nôtre Dame de la Pitié, and La Salpêtrière, Paris. Second Edition, pp. 527. London: 1849.

When DR. HENRY BENNET published the first edition of his work, very inadequate attention had been paid, in this country, to Inflammation of the Uterus, and to ulceration and induration of its neck. In France, however, where the use of the speculum had long been insisted on, as an ordinary aid in the diagnosis of even trifling uterine disorders, there was not the same want of knowledge. It was in the unrivalled fields of observation laid open to him when house-physician in the Parisian Hospitals, that Dr. H. Bennet gathered the materials for his first edition; but in the second, which is, in reality, a new work, he has been able to add the results of much additional observation in this country, as well as the fruits of his subsequent reading and reflection. While the author constantly shows himself well acquainted with the researches of his predecessors and cotemporaries, and ever willing to award to them their due share of merit, or of criticism,—yet, it is principally as a record of his own clinical experience, that the present treatise is valuable. He has not entirely convinced us of the truth of all his conclusions, and practical suggestions; but he has laid before us such an amount of solid information, as we venture to assert is not to be found in any other Treatise on Uterine Diseases. We entirely concur in the leading doctrine of Dr. Bennet's work, which he thus enunciates: "Inflammation is the key-stone to uterine pathology; and unless the phenomena which it occasions be recognised, all is doubt, obscurity, and deception". This is an axiom which few in the present day will controvert; but it is also one which may lead different minds to the adoption of different methods of diagnosis and treatment.

Dr. Bennet thus sets forth the fruits of his writings: "Since the first publication of my researches in Uterine Pathology, above four years ago, a marked change has taken place in the opinions of a large portion of the profession,—a change which may fairly be attributed, in a great measure, to the influence exercised by my writings. Several of the most eminent Uterine Pathologists of the present day—amongst whom I may name Dr. Montgomery, (*Dublin Quarterly Journal*, August, 1846,) and Dr. Evory Kennedy, (*Ibid.* February, 1847,) have since then openly advocated views similar to those which I entertain, respecting the frequency of inflammatory affections of the neck of the uterus. Moreover, I am able to state, from positive knowledge, that the practice of nearly all the eminent consulting practitioners in this department of pathology has been greatly modified within that period; and it is but rational to infer, that their theoretical opinions have undergone a similar change."

The special claims of the second edition are thus enunciated. "In the present work, there is much that is original, and new to the profession, both abroad, and at home. I would more especially direct attention to the history of chronic metritis, and of the displacements which it occasions, (of late years so erroneously viewed); of internal metritis, hitherto confounded with disease of the cervical cavity; of inflammation and abscess of the lateral ligaments in the non-puerperal state, never as yet described by any author; of inflammation and ulceration in the cavity of the cervix; of inflammation and ulceration in the virgin, in the pregnant and puerperal condition, in the aged—and in connection with polypus, and with uterine tumours; and to the section on the diagnosis of cancer."

KNOWLEDGE OF THE ANCIENTS. It appears that the ancients had an amount of knowledge of uterine diseases which is calculated to surprise

many of the moderns. The following extract from Paulus Ægineta is interesting. "The uterus is often ulcerated from difficult labour, extraction of the fœtus, or forced abortion or injury of the same, occasioned by acrid medicines, or by a defluxion, or from abscesses which have burst. If, therefore, the ulceration be within reach, it is detected by the DIOPTRA, but if deep seated, by the discharges; for the fluid which is discharged varies in its qualities. When the ulcer is inflamed, the discharge is small, bloody, or feculent, with great pain; but when the ulcer is foul, the discharge is in greater quantity, and ichorous, with less pain. When the ulcer is spreading, the discharge is fetid, black, attended with great pains, and other symptoms of inflammation: irritation is caused by relaxing medicines, and relief by the opposite class. When the ulcer is clean, the fluid is small in quantity, consistent, without smell, thick, white, with an agreeable sensation. When the ulcer is inflamed, we must use those things recommended for inflammations. When it is foul .... the Egyptian ointment without the verdegris answers admirably for the CURE of ulceration." The *dioptra* (διοπτρα) mentioned in the above passage seems to have been a bivalved speculum; hence it appears that this instrument was in vogue at least as early as the seventh century, when Paulus Ægineta wrote: but, as he compiled his account of uterine diseases from much earlier authors, it is almost certain that ocular examination of the os and cervix uteri was in vogue among physicians of a much more remote period. We refer those, who desire more particular information on this curious subject, to the Sydenham Society's edition of the works of Paulus Ægineta, ably edited by Mr. Adams.

THE LOSS OF KNOWLEDGE OF THE DIAGNOSIS AND TREATMENT OF UTERINE DISEASES, possessed by the ancients, is thus most interestingly explained and commented upon. "When Europe was plunged in the intellectual darkness that followed the overthrow of the Roman Empire by the barbarians, science found a refuge among the Arabs; and it was through their labours principally, that the Greek and Roman medical classics were preserved, and became known to their successors in science—the Roman Catholic priesthood. On what is called the revival of letters taking place, several centuries after the overthrow of the Arabian caliphs, all the knowledge of the day—medicine as well as the other arts and sciences which constituted the Quadrivium—was confined to the priests and monks."

"Both the Arabian physicians and the Roman Catholic priests were placed in a position of peculiar delicacy towards their female patients; the former, owing to the seclusion of the female, enforced by Mohammedan customs, and the latter owing to their vows of celibacy. It is not, therefore, extraordinary that the Arabians should merely have transmitted to us in their works the information respecting uterine diseases and midwifery contained in the Greek and Latin authors whom they translated or copied; nor is it extraordinary that the Roman Catholic priesthood should have abandoned midwifery to midwives, and have allowed the practical knowledge of uterine diseases, contained in the works of the ancients and of the Arabians, to fall into abeyance. Neither the Mohammedan nor the monkish physicians were so situated socially, as to be able to prosecute these branches of medical knowledge. Thence it is that midwifery was utterly neglected, and remained a dead letter, so far as science is concerned, until a comparatively recent period,—that of Ambrose Paré, Guillemeau, etc. Thence it is, also, that a cloud of ignorance has from the same cause overshadowed uterine disease until our own day.

"That results directly produced by the existence of a peculiar state of society should have remained in operation for several centuries, after the social condition which created them has itself ceased to prevail, is certainly rather singular; but this is not unfrequently the case, as might be variously exemplified. It would be difficult, however, to meet with a more striking illustration of the fact, than is presented by the history of midwifery and uterine diseases. Up to the middle of the fourteenth century, the practice

of medicine being in the hands of the priesthood only, the neglect into which they fell can be easily understood. It is also easy to understand, that these branches of medical knowledge should have continued to be neglected for some time afterwards, a certain connection long existing between the practice of medicine and the clerical profession. Although Pope Honorius the Fourth, at the close of the fourteenth century, prohibited priests from actually practising medicine, yet, in various countries physicians were bound by oath to celibacy, as was the case till the year 1420 in the University of Paris. It does appear, however, most marvellous that the influence of these former social conditions should still be felt in the medical profession—should still exercise an evident control over medical science in England, a country which has now for three centuries professed Protestantism. And yet, unless we admit that such is the case, how can we account for the existing state of uterine pathology, or explain the opprobrium thrown, until within the last few years, by the governing bodies of our leading medical corporations, upon those who devote their attention to midwifery, and to the diseases of females, inseparably connected with midwifery?" (pp. 7-9.)

The Speculum has been, and still is, much objected to by several British obstetricians of great repute; but while we respect the excellence of the motives of these gentlemen, and give due honour to their zeal, we cannot help saying, that their strictures apply rather to the indiscriminate, or unnecessary use of the instrument. We decidedly deprecate its employment on every vague suspicion of uterine disease, as well as in a pretty numerous class of cases, in which, though we infer the existence of slight congestion or inflammation, (which ocular inspection might verify), we likewise know that, by other means of diagnosis, we may make out their seat and character sufficiently to enable us to accomplish a cure. In such circumstances, we must neither blunt nor rudely shock those reserved and pure womanly feelings, which alike sanction and sanctify the freedoms of English society, and which, in conjunction with religious principle, form the only safe and impregnable barrier against a general corruption of morals, such as France suffered from, antecedent to, and during her first Revolution.

It is not for us—it is not for any man, to lay down *positive rules* by which others are to be regulated, in their methods of diagnosing and treating the diseases of women. Every case must be dealt with in such a way as the symptoms, age, and condition of the patient render necessary, or allowable. Exploration with the speculum or other instrument should, except in a few exceptional cases, never be resorted to in the unmarried. As regards the speculum generally, we would say this: Let every physician, before he employ it, address to himself, *in foro conscientiæ,* this question, and let his conduct be regulated by the reply,—"*Is its use absolutely necessary?*" Our experience coincides with that of Dr. H. Bennet as to the feelings entertained by our countrywomen on this subject. "I have met," says he, "with many objections; but never with a decided refusal, when I have stated that an examination was IMPERATIVELY NECESSARY."

Anatomy and Physiology of the Uterus and its Cervix. The chapter upon these subjects claims our especial attention, and we propose, on the present occasion, to confine our critical analysis to it, reserving the principal part of the volume for future consideration. We think it particularly important, that correct views should be entertained regarding the structure and functions of the Uterus and its appendages, at a time when so many have their attention directed to the cure of dysmenorrhœa and sterility by operative means,—a result which, though perhaps not so often practicable as some imagine, is yet, at the present moment, properly claiming considerable attention. We allude to the various proposals for dilating or incising the os externum, introducing a probe through the os internum, or carrying a whale-

bone catheter into the Fallopian tubes, after the method of Dr. Tyler Smith, and which Sir Benjamin Brodie, one of the highest surgical authorities in the world, has declared not only to be practicable, but to be an operation "safe enough in gentle and cautious hands".[1] For these reasons we lay before our readers the statements of the most recent authors on the anatomy of the Uterus, so far as a knowledge of it is necessary for a proper judgment on the practices to which we have referred.

Before doing so, however, we would remark that, as regards *Sterility*, many cases arise from incompatibility of the parties—a want of suitableness to each other—and to no structural or functional disorder; and, in not a few instances, the removal of barrenness is ascribed to special treatment, when it ought not. We could supply many illustrations in point; but we prefer giving one conveyed to us by a metropolitan accoucheur of great experience, upon the occasion of our alluding to this subject in a previous Number. The following is a verbatim extract from the letter to which we refer:—

"Several years ago, a lady called at my house to consult me respecting her health; and her general appearance, at first sight, indicated that she was far from well. She told me that she had been married nearly six years, but had never become pregnant, unless she had once miscarried, soon after her marriage; on inquiry, I learnt that the only ground for supposing this to be a miscarriage was, the occurrence, at *the regular period*, of a more than usual amount of discharge, together with some coagula, and much pain. It was very evident, that the not having children preyed much upon this lady's mind, and that her delicate state of health was seriously increased by mental disquietude. She had a white tongue; irregular bowels, which she managed badly, being in the habit of frequently taking large doses of saline purgatives; her pulse was small and quick; she complained of much pain in the loins; the urine was pale and abundant; and she was much troubled with leucorrhœa. There was something in the appearance and manner of this lady which led me to suspect, that she had sought relief by going from one doctor to another, without persisting in any plan of treatment for a sufficient length of time: however, I gave her such advice as the case seemed to require, and wrote a prescription for her, the effect of which I requested to be informed of after a short time. On asking her name, to append to the prescription, I fancied, from the confusion exhibited, that 'Mrs. Johnson' was a feigned name, and, upon the whole, did not expect that I should be favoured with another visit. Contrary to my expectation, however, in about three weeks she called again, looking better, and reporting herself to be so. She now became a regular "at home" patient, and I saw and prescribed for her frequently, till, by my recommendation, she went to the sea-side to bathe. A few months intervened, when I received a message to call upon a lady of rank, whom I found to be my former patient, 'Mrs. Johnson'. She was pregnant, and wanted to engage me to attend her labour, and to get some instructions as to how she should manage herself in the meantime. It will naturally be supposed that I took credit to myself, (though by no means to the extent that it was given to me by my patient and her friends), for having been the permitted means of improving her health, and thereby placing her in such a condition as was compatible with conception and the nutrition of a fœtus. It so happened, some time afterwards, that, dining at a medical party, I sat next to a member of the Royal College of Surgeons, who took an opportunity of congratulating me on my attendance upon Lady ——, in her confinement; and he added, 'I believe you do not know how it happened that, after so many years' sterility, she had become pregnant.' 'Oh yes,' I said, 'she had been my patient for some months, and I was so fortunate as to be the means, by improving her health, of restoring to activity and perfection the impaired and incapable faculty of conception.' 'Not a bit of it,'

[1] *Lancet* for 4th August, 1849, p. 119.

said he; 'your treatment of the case had nothing to do with it: the pregnancy of Lady —— was produced in consequence of my having cured my Lord of an old-standing stricture, by means of a caustic-bougie; it was one of the most troublesome cases of the kind I ever met with.' Who shall decide, when doctors disagree? In this case no decision was come to. My friend, the surgeon, was clearly of opinion that no doubt could exist of *his* pretension to the honour, such as it was; nor would I surrender the claim, which I thought might fairly be ascribed to medical regimen and re-instated health. So we both enjoyed the pleasures of our own imaginations, though both, perhaps, lamented that medical experience was so liable to uncertainty and doubt. S. M."

The muscular fibres of the impregnated uterus are easily demonstrated; but, in the non-impregnated state of the organ, they have a rudimentary appearance. In the former condition, its *blood vessels* and *nerves* are also immensely more developed—"its vitality is consequently great, and, as a necessary result, its pathology is that of a highly vitalized organ."

Cellular tissue seems to be entirely absent from the fibro-muscular tissue of the body of the uterus. Jobert de Lamballe states, as the result of his researches, that there is not any, not even between it and the investing peritoneal membrane. In the neck of the uterus, there exists a certain amount of cellular tissue—an anatomical peculiarity which explains various differences in the manner in which the body and neck of the womb are respectively affected by disease.

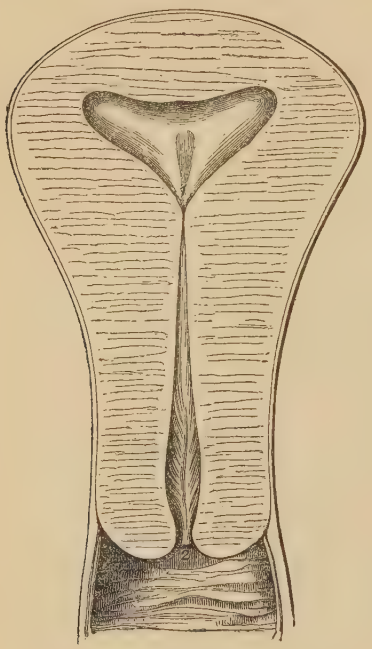
"The presence of muscular fibres has," Dr. Bennet says, "been denied, but without sufficient grounds. I have myself distinctly seen them in the cervix uteri of a woman who died in the eighth month of pregnancy; and M. Jobert de Lamballe has met with them, both circular, decussating, and longitudinal, in the entire animal creation. The circular fibres are the most numerous, there only being longitudinal ones in the posterior region of the cervix. The circular fibres are distinct from those of the body of the uterus: the longitudinal fibres which occupy the middle posterior region of the cervix are, on the contrary, the continuation of the posterior longitudinal layer of the uterus. Hence, no doubt, it is that Chronic Inflammation of the Cervix Uteri has a much greater tendency to pass on to the posterior wall of the uterus, than to the anterior; the anterior region of the cervix being less intimately connected with the body of the uterus." (pp. 11-12.)

The cavities of the uterus are generally treated of in a very slovenly and inaccurate manner, both in works on descriptive anatomy and obstetric practice. We subjoin Dr. Bennet's description. "The uterine cavity is not, as it is generally described, a 'single' cavity reached by a channel or passage through the neck, but a *double* cavity—one belonging to the uterus itself, and the other to the uterine neck, and each dissimilar to the other. The cavity of the uterus is triangular, and its parietes form curves, the convexities of which are internal. The cavity of the uterine neck is, on the contrary, fusiform, and its lateral parietes constitute regular curves, the convexities of which are external. At the union of the two cavities, there is, during life, a natural stricture or coarctation, which closes the cavity of the uterus. This coarctation, which is not mentioned or described by anatomists, exists, I find, always, or nearly always, in the absence of disease, and is sufficiently great, except soon after parturition, and sometimes for a few days after menstruation, to prevent even a small sound from penetrating into the uterus, unless considerable force be used. From its universality and occasional persistence after death, it must be the result of the anatomical structure of the parts, and probably of the presence of a kind of muscular sphincter. When the mucous membrane of these cavities is inflamed, this sphincter becomes relaxed, and then the uterine probe passes easily into the uterine cavity." (pp. 13-14.)

This coarctation between the cavities of the body and cervix seems to

form a perfect septum, (except under the circumstances noted,) in virtue of the closure of a sphincter muscle. As all other outlets in the body are furnished with structures of this kind, Dr. Bennet's description has analogy

Fig. 1.



Cavities of the Uterus and Cervix, as they really are during life.

Fig. 2.

Uterine Cavities, as represented in Quain's plates.

in its favour: and so far as a hasty examination of a few specimens entitle any one to form an opinion on so important a subject, we are inclined to think that it can be fully borne out by actual observation on the dead body. The point is one of great practical importance, and ought at once to be settled by impartial persons. We say so, because, if Dr. Bennet's anatomy be correct, various considerations of vast practical moment arise with reference to the uterine sound of Dr. Simpson and the Fallopian catheter of Dr. Tyler Smith. This has been noticed by Dr. Bennet in reference to the former. "The uterine sound is a very useful instrument in the diagnosis of diseases of the uterus. The profession are indebted to Professor Simpson for its application to uterine pathology; the idea, although very simple, not having occurred to any previous practitioner. The uterine sound is merely a graduated metallic bougie, with a handle. The inches and half inches are figured; and two inches and a half from the end, there is a small protruberance, which marks the depth of the uterine and cervical cavities in the healthy state. In examining a patient with the sound, in order to ascertain whether it passes freely through the cervical cavity, and enters the uterus, it is very necessary to be certain that it really does penetrate as far as this protuberance. The fact of the operator being able to replace the womb, or to turn it upwards, by no means proves that such is the case: the purchase obtained on the uterus, when it only enters as far as the os internum,—that is, one inch and a half, or one inch and three quarters,—

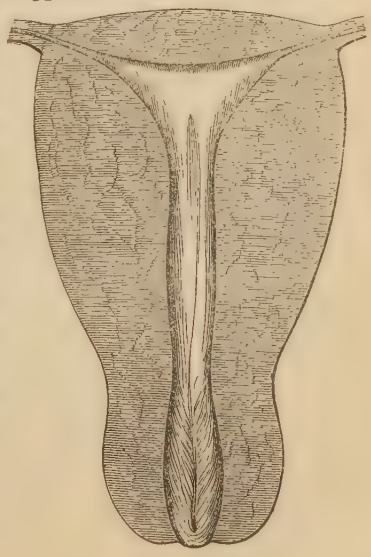
being quite sufficient to enable the practitioner to accomplish this. In order, therefore, to be quite certain, he should carefully ascertain, by the touch or the eye, that the sound has really entered above two inches. I am convinced, that, for want of care in ascertaining this point, errors are continually made, even by those who are in the constant habit of using the sound. It is generally considered that it has passed into the uterine cavity if the womb can be raised on it, when in reality, as we have seen, it may only have reached the os internum. I have witnessed this mistake repeatedly.

"The sound should not be introduced into the cavity of the uterus, in my opinion, except as a necessary means of diagnosis. Its contact with the lining membrane of the uterine cavity is frequently attended with pain, and often by nausea, faintness, and a slight loss of blood. This leads me to conclude that the internal stem of Dr. Simpson's permanent pessary does not, generally speaking, reach the uterine cavity, but merely remains in contact with the mucous membrane of the cervical cavity, which is infinitely less sensitive. Were it otherwise, I cannot conceive that the continued presence of the pessary could be borne without serious accidents occurring.

"The uterine sound is also useful to bring the cervix fully into view when only partially within the field of the speculum, and to depress the lips of the open os uteri, so as to allow the eye to penetrate and to ascertain how far the morbid dilatation, the result of inflammation, reaches. In the absence of the uterine sound, a common bougie will answer the same purpose." (pp. 503-4.)

Dr. Tyler Smith states, that the delineations which we have copied from Dr. H. Bennet's work have been appealed to, as proving "the difficulty or impossibility of reaching the Fallopian canals by his method". He has from that cause communicated the following observations to the *Lancet* of Aug. 4, 1849. We quote them because they show that, however accurate may be the description of Dr. Bennet, and however numerous may have been the dissections on which it is based, it is not yet undisputed in some important points. The careful examination, exact measurements, and mathematically accurate delineations of a series of uteri being still required, we simply subjoin an extract from Dr. Smith's communication, abstaining from criticism or comment till further elucidations have appeared.

Dr. T. Smith says, "That what I have advanced is correct, will be shown by a woodcut which is subjoined. It is copied exactly from nature by the artist. The cut represents the antero-posterior section of the uterus of a young woman aged 21, who had never been impregnated, and in whom the hymen was perfect. The uterus here represented was above the average size of the nulliparous organ, but was otherwise well-formed. Any one who may have noticed the engravings of the uterine cavity, as generally given, will see that this differs very materially from them in several particulars, which, as regards the operation upon the Fallopian tube, are of considerable importance. During life, the os internum and the canal represented above it are slightly more contracted than appears from the wood-cut.

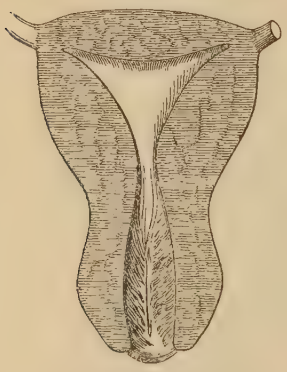


Virgin Uterus and its Cavities.

"The uterus is usually described

as consisting of a cervix, body, and fundus. The description of the uterine interior naturally admits of a similar division. There are—1, the slightly bulbous or fusiform canal of the cervix ; 2, the almost cylindrical canal of the body of the uterus, contracted at its point of continuation with the cervical portion, and slightly also at its entrance into the triangular cavity of the fundus ; and, 3, the triangular cavity of the fundus itself. These three portions are correctly represented in the above woodcut. It will be seen, that the angle of the entrance of the Fallopian tube into the uterus on each side is very acute, but not more so than is found in nature. As I have said, these angles are generally very ill-defined in anatomical engravings. The incorrectness must arise from the uterine cavity not being entirely laid open up to the tubes, or else the drawings must have been made some time after the section of the uterus had been prepared, in which case it soon falls out of its definite shape. At least, I know not how otherwise to account for the errors of delineation which have been so frequently made.

" The best engravings of the uterus which I have met with are contained in the new work of M. Paul Antoine Dubois, ' Traité Complet de l'Art des Accouchements,' of which, I believe, the first part only has yet appeared. M. Dubois gives representations of the exterior and interior of both *nulliparous* and *multiparous* uteri. But judging from the organs I have examined —and I have diligently inspected a considerable number since I commenced the present inquiry—I find that his engraving of the nulliparous organ, though more correct than any others I have seen, is not free from error. In the first place, the organ is certainly below the natural size in the adult woman, particularly in length. In the next, M. Dubois has altogether omitted to represent the canal of the body of the uterus between the cervix and the triangular cavity. In this woodcut, the cavities of the fundus and cervix communicate directly ; but the Fallopian angles are given with striking fidelity, and may be contrasted with the representation of the same parts in other obstetrical works. In this particular, the engravings of M. Dubois bear out my description of the upper part of the uterus in my first paper, (vide *The Lancet*, May 9,) and are very similar to the woodcut given above. I am extremely glad to produce from so eminent an authority a representation of this part of the organ, which shows most satisfactorily the ease with which the natural conformation of the nulliparous organ guides an instrument towards the uterine openings of the Fallopian tubes. Let any one compare the two following woodcuts—the one of the nulliparous, the other, of the multiparous uterus, from M. Dubois, and it will be at once evident that, in the nulliparous organ, in which sterility most frequently exists, there is a natural pathway, or groove, leading to these canals. In the multiparous uterus, on the contrary, the internal cavity is ovoid, instead of triangular. There is nothing in the latter to direct a catheter or bougie towards the tubes. This struck me very much when making my first experiments. The uterus having been developed to the full size of gestation, does not return to its primitive shape. The triangular cavity of the fundus disappears after complete ingravidation. Hence the Fallopian operation is comparatively easy and natural in the nulliparous organ, in which it is chiefly or entirely required, while it is more difficult in the multiparous uterus, when the organ has been fully developed.

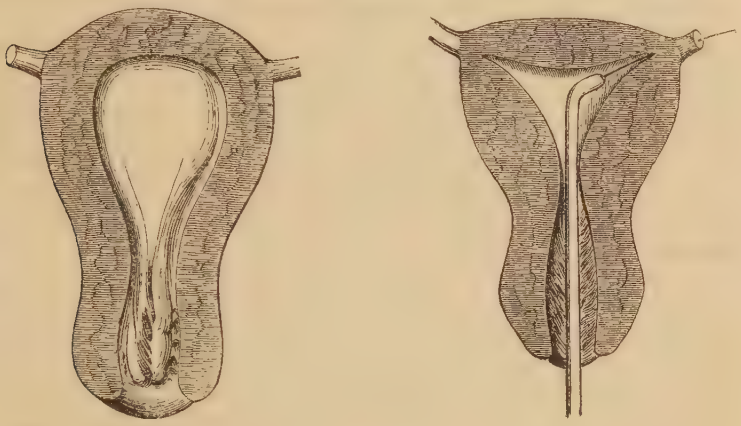


Nulliparous Uterus, after M. Dubois.

The above engraving contrasts very strikingly with the uterine cavities

represented in the first woodcut, particularly as respects the Fallopian angles and the conformation of the upper part of the canal of the body of the uterus.

"I have taken the opportunity of giving a woodcut, from M. Dubois, of the uterus laid open, in which a catheter has been added, to show the operation upon the left Fallopian tube. This renders the matter more clear than



Multiparous Uterus, after Dubois.

I was able to make it in the woodcuts of my former papers.[1] I prefer to give the engraving of M. Dubois for this purpose, rather than my own, because there can then be no possible suspicion of adapting the organ to the instrument. M. Dubois very happily designates the cornua of the uterus as the infundibuliform angles—'les angles infundibuliformes.' A better term than this could scarcely be devised. The woodcut shows the operation with tolerable accuracy; but by passing the beak of the catheter to the roof of the cavity, and inclining it a little on one side, it is easy to guide the extremity of the instrument quite into the angle, so as to render the wrong direction of the bougie difficult or impossible. The bougie is represented too delicately,—the tube admitting of an instrument of considerably larger size.

I have been thus minute in describing the peculiarities of the nulliparous uterus, because I am well aware that many persons have felt a difficulty in admitting the practicability of the operation. Certainly, the descriptions and representations of the uterine cavities commonly met with, were not likely to lessen any hesitation of this kind. An examination of the recent nulliparous uterus, or of faithful representations of its interior, must, I am confident, be followed, with all candid observers, by a belief in the possibility of exploring these tubes. As a striking instance of the little exact knowledge which obtains of the infundibuliform angles, I may mention, that a northern critic, speaking of the operation, says, that the Fallopian apertures are 'beset with small rugæ of the soft mucous membrane', and that it will be difficult to avoid them. To this the reply is easy. There are no rugæ whatever, nor signs of rugæ whatever, in the Fallopian angle, or at the entrance to the Fallopian tube! This part of the organ is remarkable for its density and smoothness. With a flexible bougie, it would be quite impossible to perforate the dense and thick parietes of the uterus in this situation. I know readily when the bougie has not entered the tube, because, holding the extremity of the catheter lightly in the finger, its beak is always turned away from the Fallopian tube, upon which the attempt is made, over to the other side of

[1] London Journal of Medicine, July, p. 676.

the uterus, if the bougie happens to pass from the extremity of the catheter, and, instead of entering the tube, should impinge upon the wall of the uterus. The slightest resistance is sufficient, while the catheter is held lightly, to turn it aside. More than this, with a practised touch the slightest impediment can be felt. As one of the highest surgical authorities remarked to me, the difficulty and nicety of the operation are not so great as the passage of a catheter through the urethra in enlarged prostate."

Frequency of Inflammation of the Uterus. The anatomical differences between the structure of the body and neck of the womb, as explained by Dr. H. Bennet, enable us very easily to understand why inflammation of the former is a rare, and of the latter a common affection. Many of our best practical men hold different opinions as to the frequency of inflammation of the neck of the womb; and among others Dr. Ashwell, who has enunciated very strongly his sentiments on the subject. We have already said, (January, p. 63,) that on this point we coincide with Dr. H. Bennet. Most assuredly, nineteen out of every twenty cases of leucorrhœa and menorrhagia are inflammatory.

Having now displayed the preliminary parts of Dr. Bennet's Treatise, we must pause; but we hope, on a future occasion, in one unbroken article, to enter upon the special details of his pathology and practice, which we may in the meantime remark are elaborate, scientific, and useful. Some of his views may be pushed too far, and surgical interference may be advised too commonly as a substitute for milder treatment; yet the pathological ideas which pervade the volume are sound and true, and such as every capable observer may turn to good account in the management of Uterine Diseases.

(To be continued.)

Demonstrations of Anatomy: being a Guide to the Knowledge of the Human Body. By George Viner Ellis. (Part II.) London: 1849.

Mr. Ellis has punctually performed his promise of completing his *Demonstrations of Anatomy* by the beginning of October. We can add but little to the notice we gave of the first part of the work. The concluding part is of equal excellence; and of the whole we will assert, that, as a guide-book for the student in the dissection-room, it is not equalled by any which has come under our notice.

Lectures on Electricity and Galvanism, in their Physiological and Therapeutical Relations; delivered at the Royal College of Physicians. Revised and Extended. By Golding Bird, A.M., M.D., F.R.S, F.L.S., Assistant Physician to, and Professor of Materia Medica at, Guy's Hospital. pp. 212. London: 1849.

These Lectures, having appeared in the *Medical Gazette*, are already well known to the profession. Like everything which proceeds from their able author, they are eminently lucid. As to the extent to which Electricity and Galvanism may be used in therapeutics, certain differences of opinion prevail; but, from the great importance of the subject, we trust that its investigation will be pursued by those, who have opportunities of making the necessary observations on a large scale. We strongly recommend the study of Dr. Golding Bird's valuable little volume.

CRITICAL DIGEST OF THE BRITISH AND FOREIGN MEDICAL JOURNALS.

PRACTICE OF MEDICINE AND PATHOLOGY.

M. EDOUARD VANDEZANDE ON COLCHICUM IN DROPSY.

The preparations of *Colchicum Autumnale* are usually employed solely on account of their efficacy in rheumatism and gout. Störck, however, who introduced this plant into the materia medica in 1763, recognised it as a powerful hydragogue, and employed it as a succedaneum to squills. In spite of his recommendations, and of the favourable reports given by Plenck, Quarin, Zacht, Cullen, and others, the employment of Colchicum in dropsy has not extended, and at last has been almost entirely neglected. In later times, the attention of some physicians has been fixed afresh on the power which Störck recognised in colchicum. Among others, Dr. Kennedy, in a memoir presented to the Surgical Society of Ireland, relates that he has, in a large number of dropsical cases, obtained astonishing results from the employment of the vinous tincture of this plant. Having also made use of this preparation in some cases of serous infiltration and accumulation, I have thought it not unprofitable to give a summary account of the results which I have obtained; first, because they are of a nature to lead my professional brethren to have recourse to the hydragogue power of the plant in analogous cases; and also, because the effects of Colchicum have not always been so complete or so manifest as in the cases which I have observed, of which I shall record the principal.

Case I. Jean Bulckaert, a workman, aged 42, of weak constitution, was seized, three years ago, with intermittent fever in Flanders, where, as is well known, this disease is endemic. Having been under treatment for several months in the hospital at Dixmude, he recovered; but, on his returning home, where he could only procure insufficient food, the disease was not long in recurring. Instead of then applying for medical advice, he had recourse to some domestic remedies, which produced no effect. The patient soon presented all the characters of paludal cachexia. The lower extremities, and the whole body in succession, became œdematous; the abdomen was distended, and the respiration impeded. It was when in this condition that Bulckaert first applied to me. After febrifuge tonics and diuretics had been used for six weeks, the œdema disappeared, and the state of the patient's health seemed satisfactory, although there still remained a slight enlargement of the spleen, of which he neglected to get relieved. Last April, two years after the first appearance of the fever, I was again sent for by him. The dropsy had reappeared, but this time it had not been preceded by an attack of fever: there was excessive serous infiltration of all parts of the body, and the urine was slightly albuminous. The same treatment as before was adopted, but without the least success: I then prescribed the wine of Colchicum in daily doses of 6 grammes (about 3ii), increasing the dose by a gramme daily. The medicine was well borne by the patient: it was increased to 40 grammes daily; this quantity was continued for four days, at the end of which time the patient was free from dropsy. During the latter period of the treatment, the alvine evacuations were abundant, and the quantity of urine was considerably increased.

Case II. A woman, named Messiaen, became dropsical after an attack of confluent small-pox: the dropsy was preceded, for some days, by paroxysms of intermittent fever. Neither nitric acid nor heat showed the presence of albumen in the urine. I treated her with wine of Colchicum, in doses of eight grammes, without any other medicine. At the end of a fortnight, the anasarca had disappeared, and the patient felt herself completely restored.

Case III. A poor woman, who had twice been attacked with articular

rheumatism, from which had resulted an organic affection of the heart, with habitual dyspnœa, observed her lower extremities to become œdematous, without any known cause. The extreme misery in which this woman was, and her dirty habits, gave but little hope of a prompt result from any treatment whatever. I resolved, however, to give her Colchicum, especially as I thought that the rheumatic diathesis was connected with the production of the dropsy. The medicine was not well borne, in doses of eight grammes. I diminished the dose by one-half; but, in a few days, I had to discontinue its use entirely, in consequence of the occurrence of vomiting, dry tongue, and intense thirst. Some time after, when the symptoms of gastric irritation had been removed, I again employed the Colchicum in smaller doses, but without any effect. Mild tonics were then prescribed; and, under their use, the œdema at length disappeared. The woman has still œdema of the feet.

Case iv. A miller, addicted to the use of alcoholic liquors, had for some days complained of *courbature*, loss of appetite, and a remarkable diminution of urine, when he perceived symptoms of dropsy. I first saw him on the 15th of last May. The lower extremities, the scrotum, and the hands, were very œdematous; the face was much puffed up; the abdomen was hard and distended; the respiration was impeded. On testing the urine with heat and nitric acid, a large quantity of albumen was detected. The tongue was furred, the stools unfrequent, and the pulse somewhat febrile. The patient complained of no pain in any part of his body. With the object of cleansing the digestive canal, I prescribed an emeto-cathartic, consisting of a decigramme (1½ grain) of tartar emetic, 32 grammes of magnesia, and 250 grammes of water, of which a wineglassful was to be taken every half hour. The patient had several evacuations from the stomach and intestines, without any marked effect on the dropsy. On the 18th of May, wine of Colchicum was ordered in doses of six grammes, and was very easily supported. The next day, I increased the quantity by two grammes, and continued it for ten days. As this treatment produced no amelioration of the symptoms, the patient importuned me to try some other means. The urine being still albuminous, I had recourse to the internal administration of nitric acid, as recommended by Professor Forget. This medicine had the desired effect. In four or five days, there was a remarkable diminution in the size of the scrotum, while the œdema of the extremities decreased; the abdomen became softer, and the face less puffy; the urine was more abundant and less albuminous. In spite of the continued use of the medicine, the patient remained in the same condition for some time; and it was only after using Bestuchef's tincture[1] for some days, that the œdema and cachexia disappeared, to be succeeded by rapid convalescence, and soon by recovery.

These observations appear to me to be of a nature to induce my professional brethren to have more frequent recourse to the use of wine of Colchicum, in the treatment of certain dropsical affections. I am persuaded, though unable to specify the cases in which its employment is specially indicated, that this medicine may often be advantageously substituted for the hydragogues in most common use. At all events, I would not recommend it in all cases of albuminous nephritis; for there are medicines which act more directly on this disease, and which, therefore, seem to me to be preferable. [*Annales de la Soc. d'Emul. de la Flandre Occidentale*, as quoted in the *Revue Médico-Chirurgicale de Paris* for August, 1849.]

FACTS ASKED FOR, ON WHICH TO ESTABLISH THE TRUE PATHOLOGY AND TREATMENT OF CHOLERA.—MOVEMENT IN THE PROFESSION.

The Royal College of Physicians of London, the Provincial Medical and Surgical Association, the Western Medical and Surgical Society of London,

[1] Bestuchef's tincture, otherwise called Klaproth's tincture, or ethereal tincture of chloride of iron, is composed of dry perchloride of iron, one part; Hoffmann's liquor, seven parts.

and we rather think some other bodies, have issued important circulars, calling for information on the subject of Cholera. All, most properly, ask for *facts apart from theory or opinions*. In reprinting the documents which have been issued, we would very earnestly impress upon the profession the duty which is now laid upon every member, to come forward with such a contribution to the general store as he may be able to give. We would also suggest that the different bodies might, perhaps with great advantage, co-operate, and issue *one*, in place of separate digests of information. Might not the Provincial Association, for example, have a representative in the Cholera Committee of the College of Physicians? with which committee, we think, the arranging and digesting of the reports might safely be left. From the subjoined circulars and queries, we feel confident that a committee better fitted for the duty could not be found. A general co-operation of the whole profession with the College of Physicians is what we would like to see. If we cannot combine as political bodies, let us all join, heart and soul, in this great pathological inquiry. Our broken ranks and paltry jealousies deprive us of our proper social position, and of our facilities of enlarging the boundaries of science. The present occasion offers an opportunity of union, which, if made use of, may lead men to know and appreciate each other more than they have yet done, and thus tend to good in many ways.

COLLEGE OF PHYSICIANS: THEIR CIRCULARS.

Royal College of Physicians, Pall Mall East, 6th September, 1849.

Sir,—The Cholera Committee have instructed us to address you again, for the purpose of explaining the object of the resolution transmitted to you on the 6th ult., and of offering some suggestions as to the mode in which your co-operation could be most efficiently rendered.

The opinions of the profession are divided on many points relating to the pathology and treatment of Cholera; and it is not to be expected, that the doubts and discrepancies existing will be finally settled by the evidence which any individual member of the profession may adduce. But the committee have a confident hope, that valuable and conclusive results, in regard to at least some of the disputed points, might be obtained, by collecting and comparing the observations of hospital physicians, and of the many other members of the College who have practical experience in the present epidemic.

Such a method of inquiry appears to be especially applicable, and indeed indispensable, in any endeavour to estimate the relative values of the various modes of treating Cholera, respecting which the evidence is at present so conflicting. With the co-operation of the members of the College, the committee may, it is hoped, in some cases, be able to fix the kind and amount of benefit derivable from particular remedies or plans of treatment; they may establish the superiority of some remedies; and, with regard to others, they may show that their use ought to be at once abandoned.

The following list includes the principal modes of treatment hitherto recommended. It seems desirable that every member of the College, who has the necessary opportunity, should submit one or more of these to a systematic trial in a series of cases. But the committee request, that you will communicate to them any observations you may have made, on the effects of other remedial means not included in this list.

Calomel, in large doses; in smaller and frequent doses.
Calomel with opium.
Opium in large doses.
Ammonia; alcoholic liquids; essential oils and aromatics; camphor and musk.
Acetate of lead; sulphate of copper; the vegetable astringents.
Quinine; arsenic; iron.
The saline plan, as recommended by Dr. Stevens.
The tartarized antimony plan, as recommended by Dr. Billing.
Emetics.
The free administration of cold water and ice; the cold bath and cold douche.
The application of the "wet sheet".
Injection of saline or other fluids into the veins.
Bleeding.
Electricity.

With regard to the form in which your observations on the results of treatment may be communicated, the committee would merely suggest that, with a view to the subsequent comparison of the facts contributed by different observers, a statement, not merely of the number of cases treated with each remedy, and the main results, but also of some particulars of the cases, is desirable. The following points appear the most important, with reference to the object in view :—

The age and sex of each patient.

The period of the attack at which the treatment was commenced.

The severity of the attack, as indicated by—

1. The pulse.
2. The state of the surface, especially of the face and extremities, as to temperature, moisture, and colour.
3. The appearance and amount of the intestinal evacuations.
4. The existence and degree of urgency of the vomiting and cramps.
5. The state of the urinary secretion.

The apparent immediate effect of the remedy on the symptoms.

The duration of the state of collapse, whether fatal or not, after the commencement of the treatment.

And, in cases of recovery from collapse, the supervention or not of the state called the "consecutive fever".

The preceding observations have reference, more especially, to the treatment of the disease in the stages of impending, and complete, collapse. But the committee would gladly learn the results of your experience relative to the means of arresting the diarrhœa which, in many instances, precedes the stage of collapse, and of restoring the healthy action of the kidneys when collapse has been recovered from.—(See the Queries, Nos. 6 and 10.)

Lastly, the committee request that you will communicate to them the results of any inquiries you may have instituted into the morbid anatomy of Cholera, or into the chemical and microscopic analysis of the blood and secretions in the different stages of the disease, and any general observations on the pathology of Cholera. The series of queries, appended to this letter, embraces some of the more important questions, which might be elucidated by the combined experience of the members of this College. But it is not desired by the committee, that, in any communication with which you may favour them, you should limit your remarks to the subjects of those queries.

We are, Sir, your obedient humble servants,

WILLIAM BALY, WILLIAM W. GULL,
Secretaries to the Cholera Committee.

QUERIES.

1. Can you communicate to the committee any facts observed or investigated by yourself, which appear to you demonstrative of the contagious or infectious nature of Cholera, or of its communicability in any way ?
2. Can you detail any facts illustrative of the influence of deficient ventilation, damp, foul air, and bad water, respectively, or of other external circumstances, in determining or favouring the production of Cholera ?
3. What are the particular states of body or mind, which, according to your experience, have most frequently predisposed individuals to be attacked by the disease ?
4. What are the groups of symptoms which have preceded the full development of the attack of Cholera ?
5. Have you observed any distinctive marks by which diarrhœa, about to pass into developed Cholera, may be recognized ?
6. Does it accord with your experience that Cholera, in the stage of "serous" or watery diarrhœa, can with facility be checked ? What means have you found most effectual in attaining this object ?
7. Have any facts come under your notice, which, independently of theoretical views, would elucidate the question, Whether the affection of the

intestinal mucous membrane in Cholera is the primary disease, or one of its secondary effects ?

8. Can you furnish the committee with the particulars of cases, in which the rapidity of the fatal collapse has borne no relation to the amount of fluid discharged from the blood-vessels, either through the intestinal mucous membrane, or through the skin ?
9. What are the pathological conditions which you have observed in the "consecutive fever" ?
10. What means have you found most successful in re-exciting the function of the kidneys, after the stage of collapse has passed ?

Royal College of Physicians, Pall Mall East, 13th October, 1849.

Sir,—We are instructed by the Cholera Committee to transmit to you the accompany copies of the letter issued on the 6th of September, and to request that you will distribute them amongst those members of the profession in your neighbourhood, not members of the College, who have had the largest experience in the epidemic now subsiding. Any aid which those gentlemen may afford the committee, in furtherance of the objects indicated, would be received as an obligation.

The committee are also desirous of obtaining your co-operation in a special inquiry respecting the origin and mode of propagation of the Cholera. They believe that much might be done towards the elucidation of this important question, by collecting authentic information in regard to the first cases of the disease in the several towns, villages, and public institutions throughout England. They have accordingly directed us to submit to you the subjoined queries, and to beg the favour of your obtaining for them as detailed and precise answers as may be possible :—

1. Had the person first attacked with Cholera in recently been in an infected place ? or had he received into his house clothes or other articles, which may have conveyed infection ? or had he been in contact with strangers, coming from an infected locality ?
2. If the disease appears not to have been introduced in any one of these ways, is it possible that the drinking-water was the means of conveying the infection, by its being contaminated in its previous passage (as a river or canal) through infected places ?
3. What was the character of the part of in which the first case occurred, as regards elevation, drainage, supply of water, density of population, ventilation, and cleanliness ?
4. Did the first few cases occur simultaneously ? or after what intervals did they succeed each other ?
5. Is there any evidence or probability of there having been communication, or near approach, between the first patient, or patients, and those next affected ?

The following queries have reference to the communicability of the disease, but do not relate especially to the first cases :—

6. In the instances where several cases have occurred in the same house, have they been simultaneous or successive ?
7. Have any persons attending on Cholera patients, or employed to wash the clothes or bed-linen of such patients, been soon afterwards attacked with the disease ?
8. Where several persons in one house, or in contiguous houses, have been attacked, in a district otherwise free from the disease, has it been discovered that the water used for drinking had been contaminated by a sewer, drain, or cess-pool ? or have any other causes appeared, which would explain the particular limitation of the disease ?
9. Can you learn that the disease has apparently been conveyed to neighbouring healthy places, by infected persons leaving ?

In conclusion, we have to ask of you the favour of an early reply to the present, as well as the previous, letter of the Committee. It is desirable that all communications should be sent in by the 15th of November, or as soon afterwards as possible. We have the honour to be, Sir,

Your obedient humble servants,

WM. BALY, WM. W. GULL,

Secretaries to the Cholera Committee.

It would be very difficult for the most hypercritical to object to a phrase, or even a word, in the above documents. They have evidently been framed by physicians, who have not only read and reflected much upon the pathology and treatment of Cholera, but who have also had extensive clinical experience in the disease. One or two additional points of information may occur to some, we doubt not; and perhaps it would have been well to have included a request for any facts connected with Cholera which the respondent might possess, even though not embraced in the queries. Some might have observations to communicate on the sequelæ of Cholera, upon the type of other diseases during the epidemic of Cholera, upon recovery from the cold stage by those who had no medical treatment: and others might imagine they had statements of value to make regarding other medicines than those specified, among which we might cite, as examples, sulphur, and the camphor-chloroform mixture, remedies which have been largely used by some, especially for the cramps. In reference to the calomel treatment in the stage of collapse, it would be well for the stools to be examined, for the purpose of determining the extent and rapidity with which the unaltered drug is washed out by the serous discharges.

It is not merely *desirable*, as stated by the secretaries of the Cholera Committee of the College of Physicians, to have *particulars of the cases* in which each mode of treatment was employed—it is *absolutely essential*. No statement of treatment is worth anything, unless accompanied by a full detail of each case in which it was tried,—recorded, moreover, *not from memory*, but at, or immediately on quitting, the bedside of the patient.

THE PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION, by means of its wide-spread and numerous members, possesses extraordinary facilities for obtaining a correct digest of the history of Cholera in the provinces. The following is a copy of the official paper:—

INQUIRY ON CHOLERA. In compliance with the resolution passed at the annual meeting held at Worcester, the annexed questions have been carefully framed; and it is earnestly requested by the Council that the members of the PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION will assist in this laudable purpose, by forwarding as full and complete a series of answers as possible, to Mr. Hunt, 26, Bedford-square, London, who has kindly undertaken the inquiry. CHAS. HASTINGS, President of the Council.

QUESTIONS.

1. During the prevalence of the epidemic, has your own neighbourhood, town, or district, been *exempted* from the visitation? If so, can you mention any local circumstances which may account for the exemption? Was the district healthy during the visitation of the Cholera about the year 1832, and did circumstances then exist which may be supposed to have protected it?

2. If the Cholera[1] *has* appeared in your district, how many cases have you seen? how many of these have been fatal?

[1] In using the term *Cholera* or in responding to any question concerning it, please to adhere strictly to this definition,—"The term Cholera shall be restricted to that so frequently fatal form of the disease in which there are vomiting purging, cramps, and 'rice-water' evacuations, and to that still more formidable state of collapse unaccompanied by these symptoms; that the term Bilious Cholera, shall apply to the disease formerly called Cholera Morbus, in which there is both vomiting and purging of *bile*, with cramps; and that the term Diarrhœa shall be confined to those cases in which there are simply frequent and numerous fluid alvine discharges, without either vomiting or cramps." *Prov. Med. and Surg. Journ.*, Sept. 5, p. 490.

3. *When* did the disease break out, and *how long* did it prevail? Please to state generally whether many persons were simultaneously attacked, or otherwise; and whether it commenced contemporaneously in more than one *site* in the same town or district, or whether it appeared to spread from one point only. Were there any peculiar circumstances observable in its local character, or in the course or direction of its advance, which may throw any light upon the important question, whether the disease be of a *contagious*[1] nature or otherwise?

4. Have you invariably been able to trace the disease to *local impurity of the atmosphere*, or have you seen it attack persons living in a pure air, apart from grave-yards and other sources of putrefaction, in well-drained and well-ventilated dwellings? In cases of the latter description, if any have been observed, has there been any intercourse with the sick which may tend to establish the doctrine of *contagion*, or the reverse?

5. Did the Cholera appear in your neighbourhood *with* or *without* the general and contemporaneous appearance of the *milder forms* of disease,—diarrhœa, bilious cholera, etc.? Has dysentery or typhus been prevalent or otherwise?

6. Were its ravages indiscriminate as to personal vigour, age, sex, station, occupation, etc.; or might the attacks be traced to some *predisposing personal cause*,—as weak bowels, intemperance, debility, fear, errors in diet, uncleanly or sedentary habits, or impaired health from any cause?

7. Were "premonitory" symptoms of general occurrence, or did the disease frequently appear suddenly in its malignant form, with violent cramps, vomiting and purging, "rice-water" dejections, and rapid collapse?

8. Did the symptoms differ from those generally observed and frequently described? Had the disease any peculiar type, either of mildness or malignity?

9. Are you aware of any exempting circumstances, of any description, which have uniformly protected certain individuals from the disease,—such as trades, habits, diet, etc., not inclusive of local habitation?

10. Can you throw any light on the *physical origin* or remote cause of the recent or former visitation? Are you able to say, from your own observation, that the general symptoms and history of both are similar? Have you instituted any researches into the density, humidity, temperature, or electro-magnetic phenomena of the atmosphere; especially, have you inquired into the relative quantity of ozone existing in the air during the prevalence of this epidemic or the former visitation; and have you compared it with the proportion observable during the last visitation of the influenza?[2] Have you observed the progress of the Cholera to be arrested by storms, wind, or rain?

11. Have you made any *post-mortem* examinations of fatal cases of Cholera, and with what result? Do you know of any circumstances which justify the immediate interment of the dead? Did you ever observe Cholera patients show signs of organic life for hours or days after apparent death?

12. Can you describe any method or principle of TREATMENT which has proved successful in so large a number of cases of *Cholera*, as to commend it to universal adoption? If so, has not the method frequently failed in other hands, and can you explain the cause of failure?

13. What mode of *treating* the epidemic *diarrhœa*, and premonitory symptoms generally, have you found most successful?

14. Can you suggest any means of preventing or arresting the spread of the disease, in the event of any future outbreak?

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[1] A house or district may be *infected*, so as to spread a disease not strictly *contagious*. Respondents are therefore requested to confine the latter term to evidence of communication by personal approach or contact.

[2] See an article on the Causes of Cholera by MR. ROBERT HUNT, in the *Athenæum*, Sept. 1, 1849.

15. What is your opinion as to the propriety of removing the inhabitants who have not taken the disease, from the infected dwellings, to houses of refuge, in situations where the presumed causes of the disease are not in operation?

Western Medical and Surgical Society of London. This Society deserves very high praise for the zeal and excellent direction of its labours in connexion with Cholera. It has also the merit—no small one—of having been the first body in the profession to come forward with a regular and scientific plan for observing and reporting Cholera cases.

About the end of September 1848, when the first cases of epidemic Cholera occurred in London, the first steps were taken; and on the 15th of October, a very full meeting was held, to consider what plan ought to be pursued. It was universally lamented, that the epidemic of 1832-3 should have left behind it so little authentic and positive information; and it was anxiously inquired, whether the Society might not hope, by timely exertion, to derive more satisfactory results from the epidemic which was then evidently approaching. One way to do so, seemed to be the obtaining records of such a number of cases as would justify conclusions from their analysis. But it was obvious, that these records would not be of value, unless they entered into considerable detail: and that, from practitioners actively engaged, such detail could neither be expected nor obtained, without the aid of some plan whereby their attention might at once be called to the points chiefly to be noted. There would be this further advantage, too, from an uniform plan, that the subsequent tabulation and analysis would be rendered much easier. These views were embodied in resolutions, unanimously agreed to, and made public through the *Lancet* and *Medical Gazette*, of October 21st and 27th respectively; and a committee was appointed to draw up the plan. The committee devoted itself incessantly to its labours, and early in November the plan was completed.

The tabular form consisted of a folio half-sheet, one side of which was ruled to receive all the details of the case, under the heads of "State of the countenance, and general aspect of the patient; state of the tongue; state of the skin; state of the pulse; state of the voice and respiration; character and frequency of the vomiting; of the stools; of the cramps; state of the urinary secretion; state of the nervous system", etc. etc. The paper was so ruled as to admit of eight separate observations on each of these points; it being considered that this number would be sufficient for a protracted case, while, in a rapid case, not more than two or three could be expected. On this side of the sheet, a space was allowed for preliminary inquiries, including the occupation, habits, previous health of the patient, as well as the symptoms, if any, exhibited up to the appearance of those characteristic of the disease, the locality in which he dwells, etc. etc. Another space was allotted for any general observations on the case which might occur. The other side of the half-sheet was divided into two portions: one intended for the record of the treatment pursued; the other for the entering the state of the organs at examination after death, where such was undertaken.

A form, thus completed, was capable of comprising all the details of a single case. Several hundred of them were printed at the expense of the Society, and delivered (a certain number to each) to all the practitioners, whether members or not, residing in Chelsea, Pimlico, Brompton, Kensington, Hammersmith, Putney, and Fulham. Along with them, was sent a circular letter explanatory of the purpose of the Society, requesting that a record of each case that might come under the practitioner's care might be entered on the form, and returned to the Society for analysis; and desiring information of any kind which might throw light on the disease, especially on the circumstances attending its outbreak in any *fresh* locality;

the existence or non-existence in each case of premonitory diarrhœa; its character and amount, the prevalence or not of ordinary diarrhœa, etc. etc. It was also requested that specimens of the blood, of the matters vomited, and of the characteristic dejections, might be forwarded for chemical and microscopical examination. Such was the plan proposed for the investigation of the disease. In carrying it out, the Society was obliged, for obvious reasons, to limit its operations to the district mentioned—that in which the members and those with whom they could more readily communicate, resided: but the hope was entertained that the plan would be adopted, or improved upon, by other Metropolitan and Provincial Societies, acting each within its own district. For this purpose, copies of the tabular plan were forwarded to all the London Medical Societies, and to such of the Provincial Societies as desired them; and official letters were written by Dr. Seaton, the Secretary, and published in the *Medical Gazette*, of October 27, and November 17, and in the *Lancet* of corresponding dates. If the hopes had been realized, there can be no doubt that there would now have existed materials for a far more complete history of the epidemic, based on more comprehensive data, than any we are now likely to attain. The Medico-Chirurgical Society of Bristol alone, which has since earned for itself so much honour in reference to Cholera, recognised the value of the scheme, and adopted, with slight alterations, the printed forms for cases.

As an addendum to what we have said in reference to the plan and exertions of the Western Medical and Surgical Society, and its able and zealous secretary, Dr. Seaton, we subjoin the following communication from Mr. F. S. Haden, which appeared in the *London Medical Gazette*, of October 19th, 1849.

"A plan to insure rapidity and uniformity in Cholera case-taking.

Sir,—In October, 1848, the Western Medical and Surgical Society of London issued a tabular form for uniformly reporting cases of Cholera. In this form a space is allowed for preliminary inquiries—for successive observations of the symptoms in detail—and for recording the condition of each organ at an examination after death.

"I have considered, however, that practitioners desirous of noting cases of Cholera would have their labour facilitated, if a similar list of symptoms, inquiries, &c., were printed, as is here done, with a letter or number prefixed to each. The letter or number being taken to represent the question or symptom against which it is placed, the observer would then merely have to write on a piece of prepared skin or paper, *e.g.* '2. *anxious;*' '3. *contracted;*' '4. *moist;*' '5. *cold, &c.;*' and on the reverse of the skin, the prescription. Much time would thus be saved at the bed-side, and the case could be written out in full at leisure, or entered upon the larger form of the Society.

"I am, Sir, your obedient servant,

"Francis Seymour Haden.

"Number of Case—Date—Name and Occupation—Sex—Age—Habits and Previous Health—Residence—Locality—high, low, moist, or dry—Proximity to Rivers, &c.—State of Drainage.

"*A*—Supposed exciting cause of the attack. *B*—Diet within the preceding twenty-four hours. *C*—State or stomach. *D*—State of bowels. *E*—Other ailments. *F*—Medicine already taken.

"Characteristic symptoms. 1. *Hour of first appearance?* 2. *Countenance*—Expression of? 3. State of the Pupils? 4. *Tongue*—appearance and condition of? 5. Temperature of? 6. *Skin*—Generally or locally, appearance of? 7. Condition of (as to secretion)? 8. Temperature of? 9. *Pulse*—Volume and character of? 10. No. of, whether felt at the wrist? 11. In the axilla? 12. In the carotids? 13. *Heart*—Stethoscopic examination of? 14. *Voice*—As to the tone and power? 15. *Respiration*—Frequency of? 16. Free or laborious? 17. Relative duration of inspiration

and expiration? 18. *Breath*—Temperature of? 19. *Vomiting*—Its character and frequency? 20. *Stools*—Their quantity and frequency? 21. Their character, colour, and consistence? 22. *Cramps*—Nature, frequency, and parts affected? 23. *Thirst*—Urgent or tolerable? 24. *Urinary secretion*—State of? 25. *Nervous system*—Affections of? 26. Degree of consciousness? 27. Deafness? 28. Noises in the head? 29. Loss of vision? 30. Convulsions? 31. *Termination of the case*—In gradual or sudden recovery? In consecutive fever, or in death?

"Post-mortem examination—hours after death. *External appearance of the body.* 1. Colour—temperature—rigidity? 2. Any muscular twitching after death? its duration?

"Encephalon. 3. Degree of congestion? 4. Effusion, its nature and seat? 5. Other lesions?

"Thorax. 6. *Pericardium?* 7. *Heart*—Degree of rigidity and flaccidity of each ventricle? 8. Contents of each ventricle as to quantity? 9. Condition of blood as to fluidity and colour? 10. If fluid, does it coagulate on exposure? 11. *Lungs*—General condition and appearance of?

"Abdomen. 12. State of the Peritoneum, and of the abdominal cavity? 13. *Liver*—Condition and appearance of? 14. *Gall Bladder*—Nature and quantity of its contents? 15. *Gall Ducts*—Condition of? 16. *Stomach, duodenum, small intestine, cæcum, colon, and rectum*—Contents of, respectively? Are they acid or alkaline? Condition of the mucous membrane of, respectively (*with regard to appearance and state of glands*)? 17. *Spleen?* 18. *Kidneys?* 19. *Urinary Bladder*—As to contents, and degree of contraction?

"Vascular system. 20. Aorta and venæ cavæ. 21. Pulmonary artery and vein. 22. Femoral artery and vein. 23. Hepatic, gastric, splenic, mesenteric, and renal arteries and veins. 24. General condition of whole vascular system, especially as to congestion, &c.

We have given place to the above documents and remarks, because we feel that the members of our Medical Colleges and Societies require to be stimulated to the *earnest observation of the disease*, and to be reminded of the opportunities now afforded of making good use of their facts.

CRYPTOGAMIC THEORY OF CHOLERA.

Minute Vegetable Parasites have been detected on, and within the tissues of living plants and animals, invertebrate and vertebrate. In many diseases of the human body, they have also been observed, as will be seen by the accompanying table:—

By whom observed.	*In what case.*	*References.*
Bennett, (John Hughes)	Favus: coating of the tongue; tubercular cavities, and sputa: on gums in typhus fever.	Transactions of Royal Soc. of Edin. vol. xv, part ii. 1842.
Berg	Aphthæ of children.	Müller's Archiv. 1842.
Boehm	Intestinal discharges of Cholera patients.	Die Kranke Darmschleimhaut des Asiatischen Cholera. 1838.
Busk	Vomited matter (*sarcina* of Goodsir).	Microscopical Journal. 1843.
Cowdell	Perspiration of Cholera.	Medical Gazette, Sep. 25, 1849.
Degner	Senile gangrene.	Annal. Physic. Medic. Wrateslav. Tentam. 28, p. 643.
Farre	False membrane expelled from intestine (allied to *Oscillatoria*).	Transactions of Microscop. Society, vol. i. 1844-5.
Fuchs	Crusts of porrigo lupinosa.	Die Krankhaften Veränderungen der Haut. Gœttingen: 1840.
Goodsir, (John)	Matters ejected from the stomach (*sarcina ventriculi*).	Edin. Med. and Surg. Journ. April 1842.

Table, continued.

By whom observed.	*In what case.*	*References.*
Gruby	Favus, mentagra, porrigo decalvans (*microsporium Audouini* Gr.), porrigo scutulata; aphthæ (analogous to *sporotrichium*); and matters ejected in case of obstinate vomiting.	Comptes Rendus. 1841, 42, 43, and 44. Archives Générales. 1842.
Günsburg	Plica Polonica.	Müller's Archiv. 1845.
Hannover.....	Diabetic urine (*Torula cerevisiæ*); mucous membrane in typhoid fever, pneumonia, pleurisy, phthisis, delirium tremens, apoplexy, diabetes, and chronic gastritis.	Müller's Archiv. 1842. Valentin's Repertorium für Anatomie und Physiologie. 1843.
Helmbrecht ..	Posterior chamber of eye.	Casper's Wochenschrift. 1842.
Heusinger	Blistered surfaces.	De generatione mucoris in organismo animali. Jenæ: 1821.
Jenner	Cholera evacuations.	London Journ. of Med. Feb. p. 148.
Langenbeck....	Œsophagus, and ulcers of intestines, in a case of typhus.	Froriep's Neue Notizen. 1839.
	Various cutaneous eruptions; in a cerebral tumour, in a boy, aged two years.	Samtlicher Bericht über die 18te. Versammlung der Gesellschaft deutsche Naturforscher und Aerzter zu Erlangen, in Sep. 1840
Lebert	Favus (*Oidium Schœnleinii*); porrigo scutulata (*Achorion Leberti*); chronic ulcer of leg.	Physiol. patholog. Paris: 1845, tom. ii. Mém. sur la Teigne.
Mayer	Scrofulous affection of the ear. (*Mucedo ?*)	Müller's Archiv 1844.
Œsterlen	Aphthæ.	Medicinische Vierteljahrschrift. 1842.
Rayer	Tuberculous patient.	Journal de l'Institut. 1842.
Remak	Tinea favosa (*Achorion Schœnleinii*); porrigo lupinosa; caries of the teeth, and aphthæ; in all fluid dejections, however produced; expectorations in pneumonia.	Medicin. Zeitung. Berlin: 1840. Diagnost. und Pathol. Untersuch. Berlin: 1845.
Robin	Aphthæ; dark brown liquid from stomach of icteric patient, who presented lesions of yellow fever.	Des Végétaux qui croissent sur l'homme et sur les animaux vivants. Paris: 1847.
Schœnlein	Favus; porrigo lupinosa.	Müller's Archiv. 1839.
Simon.....	Pityriasis versicolor.	De veget. par. Berlin: 1847.
Sluyter.....	Ditto.	Hautkrankheiten. 1848.
Textor	Porrigo favosa; impetigo scrofulosa, etc.	Archives Générales. 1842.
Vogel	Aphthæ, and vomited matters.	Allgemeine Zeitung. 1842.
Walther	Viscous matter in plica Polonica.	Müller's Archiv. 1844.
Wilkinson	Uterine discharge.	Lancet, Oct. 27, 1849.

Drs. Brittan and Swayne, of Bristol, have recently discovered peculiar microscopic organisms in the evacuations of Cholera patients. Previously to this, the theory of the connection of epidemic disorders with fungi had been proposed by Dr. W. C. Wallace, of New York (in the *Boston Medical and Surgical Journal* for Sept. 5th, 1845); by Dr. Scott Alison (in the *Health of Towns' Journal)*; by Dr. Cowdell; and by Professor Mitchell, of Philadelphia.

Dr. Cowdell, in 1848, published a work, entitled "A Disquisition on Pestilential Cholera; being an Attempt to explain its Phenomena, Nature, Causes, Prevention, and Treatment, by reference to an Extrinsic Fungous Origin." At pp. 202 and 203 of this work, the following remarks occur:— "The conclusion at which we have arrived, as to the nature of the cause of

pestilential Cholera is, that it is a minute fungus, probably resembling the *torula cerevisiæ*. We have ascertained that, amongst known agencies that have been suspected of generating this disease, no other could be found which, in its habits, is capable of conforming with the circumstances observed in the origin, diffusion, and morbid phenomena of the disorder; no other could exhibit those astonishing habits of uniformity, under the utmost variety of circumstances, witnessed in Cholera. The fungus, as it exists in the blood, most likely does not resemble that which produced its germs. Our opinion is, that the germs of a fungus are absorbed through the lungs into the blood of bio-chemically (electrically) predisposed persons; that a process of germination, and consequent catalytic fermentation, is immediately established; the composition of the blood instantly begins to undergo a change; the heart is less stimulated by blood, insufficiently oxygenated; and nutrition (and, consequently, the extrication of animal heat) is checked, through the capillary circulation; and coldness and lividity are thus produced . . . . An effort appears to be made in the constitution to rid itself of the morbific agent by directing it, as is usual in diseases, and also in the discharge of medicinal substances, to some excreting surface. In this case, the mucous surface of the alimentary canal, by profuse discharges, endeavours to expel the morbid matter which has been directed to its surface. It is here, on the mucous membrane, that there appears to be formed, in an early stage, (the cases seldom being sufficiently protracted for a more mature development), a nidus for the growth of fungi. This consists of the protein deposit, of the nature of which pathologists are not agreed, found in the alimentary canal, and which appears to resemble the albuminous crusts, which are the nidus of the fungus of aphthæ."

Professor J. K. Mitchell, of Philadelphia, in his work on the Cryptogamous Origin of Malarious and Epidemic Fevers, published during the present year, observes:—"The cryptogamous theory will well explain the peculiar domestication of different diseases in different regions, which have a similar climate—the Plague of Egypt, the Yellow Fever of the Antilles, and the Cholera of India. It accounts, too, for their occasional expansion into unaccustomed places, and their retreat back to their original haunts. Our hypothesis will also enable us to tell, why malarious sickness is disproportionate to the character of the seasons; why it infests some tropical countries, and spares others."

He subsequently refers to the animalcular hypothesis as incapable of accounting for the occurrence of Cholera, in the winter, in Russia:—"But if we assume for Cholera a fungous origin, all difficulties vanish; and, as in the case of yellow fever, an easy explanation may be given of every apparent incongruity. We have only to suppose, what is known to happen in other cases, that the fungi, on which Cholera is assumed to depend, acquire, at times, as do the germs of some contagious diseases, an unusual power of reproduction and diffusion, and a greater potency of expansion. Such germs may be carried by men, and goods, and ships; or may make a slower progres, by their own unaided activity; or be scattered by the winds, to regerminate wherever special conditions are found. Thus can we see why the poison prefers the route of streams, or infects the damp parts of cities; and why classes living in clean apartments, in dry districts, suffer so little."

Dr. Scott Alison, in some papers to which we formerly alluded (Jan. p. 72), has the following suggestive remarks:—"The exciting cause of Cholera appears to be some special agent. There is much evidence to countenance the supposition that it is diffused in the atmosphere; but there is some reason to think that it may be present also in surface water, and in the animal and vegetable food which we consume. Moreover, it is not unreasonable to conjecture that the human body itself may be its primary abode,—may, in short, be the very laboratory, or nidus, in which it is produced. What the nature of this implied agent is, it is difficult satisfactorily to say. *It may be an or-*

ganic body of vegetable or animal origin; it may be a low form of animal or vegetable life; or it may be a simply inorganic miasma arising from the soil, or the animal and vegetable matters covering its surface. Once received into the blood, it seems to seek the stomach and bowels as mercury seeks the liver, or turpentine the kidney."

Dr. Swayne's account of the interesting discovery made by himself and Dr. Brittan, was published in the *Lancet* for October 6, 1849:—"In July last, sub-committees were formed by the Bristol Medico-Chirurgical Society, for the purpose of examining microscopically and chemically the discharges of Cholera. The microscopical sub-committee consisted of Drs. Bernard, Budd, Swayne, Neild, Brittan, and Prichard. At one of its first meetings, Dr. Brittan and myself undertook, at the request of the other members, to examine microscopically, and take drawing of, specimens of "rice-water" evacuations, which Dr. Budd had obtained from two patients in the Cholera hospital. This examination was accordingly conducted by both of us, independently of each other; and the result, consisting of drawings and specimens, was exhibited at the next meeting. Both our drawings and specimens showed certain bodies, in considerable abundance, and so singular in appearance, that we expressed our opinion, that they were characteristic of the evacuations of Cholera, if not the very agents causing the disease. In this opinion, the other members coincided. These specimens and drawings were subsequently exhibited at the next meeting of the Medico-Chirurgical Society, on July 14th.

"From that time, we both continued our examinations of the evacuations of Cholera, with a view of confirming the result of our first observations. We were enabled to procure specimens from more than fifty different patients in the Cholera hospital. These were all examined, at various times, by Dr. Brittan and myself; and the result has been, to confirm the opinion, first expressed, as to the importance of the peculiar bodies above mentioned in relation to Cholera. Although agreeing in their result, our investigations have been carried on, from first to last, quite separately and distinctly. Whilst thus engaged in searching for these bodies in the evacuations, Dr. Brittan made the important discovery that they were present also in the atmosphere of an infected locality; and, still more recently, Dr. Budd succeeded in detecting them in the water of several districts where Cholera had prevailed. Both of these observations tend still more to show the important part, which these bodies probably take in the production of the disease.

"Cholera evacuation chiefly differs from healthy fæcal matter in the following points:—1. The great bulk of the evacuation consists of a thin serous fluid, in which are floating a large quantity of mucous globules, mixed with a hyaline basis. 2. It contains little or none of the amorphous matter tinged with bile. 3. It contains the same *débris* of animal and vegetable matters from the food, but in less quantity. 4. It contains much less epithelium than healthy fæcal matter. 5. It often presents a large number of crystals, which form the ordinary constituents of urinary deposits, especially triple phosphate, and lithate of ammonia; more rarely, lithic acid and oxalate of lime. It contains little or no chloride of sodium. 6. The most important difference is, that it presents those cells to which I have so often alluded, and which I have never detected in healthy evacuations. The same result has attended Dr. Brittan's observations.

"Now, the first three peculiarities of choleraic evacuations which I have mentioned, are what any one who was at all familiar with their appearance would naturally expect.

"The fourth peculiarity, however, directly contradicts a theory which was at one time proposed—viz., that the drain from the mucous membrane of the bowels arose in consequence of its being denuded of its epithelium. It is true, that large quantities of epithelium have been found in the contents of the intestines of persons who have died of Cholera; but this has been satisfactorily proved to be a consequence of maceration after death.

"The fifth peculiarity is somewhat remarkable, when we consider how completely the urinary secretion is suspended in bad cases of Cholera. The urinary salts occur so constantly, and in such large quantities, in the evacuations of Cholera, that it is impossible to account for them by supposing them to arise from an accidental admixture of urine, even if that secretion took place. Large and beautiful crystals of triple phosphate (Plate 1, 4) may be constantly seen in choleraic evacuations, and are often in considerable abundance. These are present, also, in healthy fæcal matter, but are seldom or never plentiful. This, however, is not the case with urate of ammonia, which is occasionally present, in very great abundance, in choleraic evacuations. It may be either in an amorphous form, or in dark-yellow, semi-opaque globules, the smaller ones often cohering together in pairs. (Plate 1, 2) Sometimes it is present in such quantity as to tinge the evacuation of a reddish colour. Lithic acid is occasionally, but more rarely present, and is never in any quantity. Sometimes lithic acid is combined with lithate of ammonia, in the mode represented by Dr. Golding Bird, in his book on urinary deposits. (Plate 1, 2.) Oxalate of lime, in its dumb-bell form, is not uncommon, and is sometimes very plentiful. (Plate 1, 3.) Although chloride of sodium is so constant in healthy evacuations, yet it is nearly always absent in those of Cholera. In one case, however, I met with it in large quantities. (Plate 1, 5.) Cholera evacuations often contain large quantities of black amorphous matter, which I believe to be calomel, as it is always most plentiful in those who have been treated with large doses of that medicine, and is rendered darker by lime-water.

"I now come to the last and most important peculiarity—viz., the presence of those peculiar cells which we have so constantly found. I have found them absent entirely in only four out of thirty-four cases; and the proportion in which Dr. Brittan has failed to detect them is still smaller. Three of the cases in which I failed to see them were unusually severe and rapidly fatal; but I do not think that this invalidates our conclusion, as I was only able to obtain one specimen of fluid from each of these, the evacuations mostly running from them through the bedding. Both Dr. Brittan and myself have occasionally failed in obtaining them in one motion (usually the first); but on examining others from the same patient, we have succeeded in finding large quantities of them. It seems sometimes, especially in the worst cases, as if there were not sufficient power in the system to expel these bodies from the intestines. The evacuations in such cases are very thin, clear, and transparent, or semi-gelatinous, but without any well-marked flocculent deposit. In the majority of rice-water evacuations, this flocculent deposit is very marked, and the flocculi contain a good deal of yellowish-white, semi-opaque matter. This is the peculiar appearance which these bodies present to the eye when clustered together in large numbers. In one case, from a convalescent patient, a tolerably thick bilious evacuation was studded upon its surface with yellowish-white bran-like scales. On examining these under the microscope, I found them to consist almost entirely of these bodies, many of which were of very large dimensions, so as to occupy nearly half the field when viewed under an eighth-of-an-inch magnifier. The flocculent deposit sometimes almost entirely consists of myriads of these bodies, of all sizes.

"These cells, which I must now describe, vary very much in size and apparent structure during the different stages of their development. The smallest are of the same size as, or even much less than, blood-globules; so that, to show them properly, an object-glass of high magnifying power, such as one-eighth, one-twelfth, or one-sixteenth of an inch is required. They are very transparent, and, like blood-discs, appear to be flattened cells; but the thickness of their walls causes them to resemble rings in appearance. Their interior is almost entirely destitute of granules. Their walls refract light powerfully; they sometimes present a clotted or even cellular appearance, and there is usually a transverse fissure or crack at some point of their circumference. In some of them, I have observed very minute cells or buds, pro-

PLATE 1

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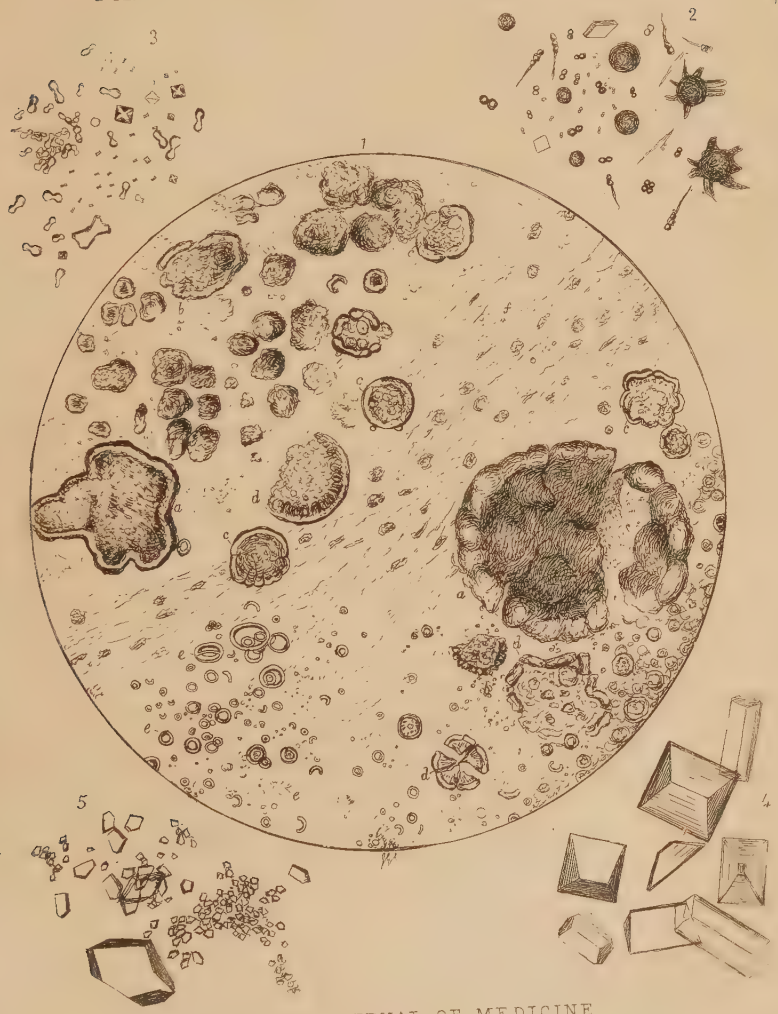

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PLATE 2

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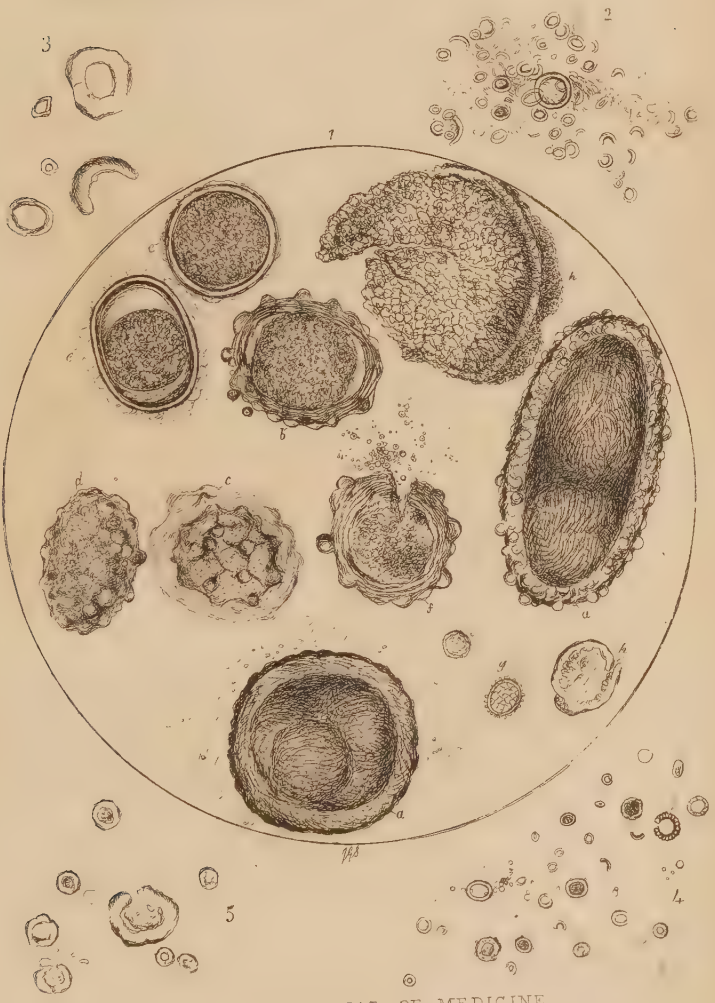

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jecting at different points of their circumference. (Plate II, 1, *g*.) Fragments of them present the appearance of small segments of circles. Cells of such dimensions are most usually found in the first portions of the alimentary canal, especially in the matters ejected by vomiting. I have, however, found them present in large numbers in the fæces, together with other Cholera cells of much larger size. These small cells precisely resemble, and are, in fact, identical in appearance with, those which Dr. Brittan has discovered in the atmosphere.

"The medium and large-sized cells (as usually found in cholera evacuations) distinctly resemble the small cells in appearance, but they are coarser and more granular in structure. Between the three, every gradation may be met with, both as to form and size. The medium cells (Plate I, 1, *c*,) appear like thick, but somewhat irregular rings; but, on altering the focus of the microscope, they can be observed to be flattened cells, with granular contents, and in some cases containing distinct cells within them. Their walls appear thick, and cellular in structure, the arrangement of the cells sometimes giving them the appearance of transverse striæ. The walls have usually a great tendency to split at four or five points of their circumference; and, when split by gentle pressure, the whole cell divides into four or five fragments, and gives exit to its granular contents. (Plate I, 1, *d*.)

"The larger cells (as usually met with) are more irregular in shape, and cellular in structure (Plate I, 1, *a*). They are semi-opaque, of a dirty-yellow colour, and have lost much of their resemblance to rings. On bringing their surface into focus, three or four cracks can usually be seen upon it, which appear deep fissures when viewed in profile. The cell-wall is distinctly cellular in structure. The cell often contains within it other cells of a similar nature. When one of these large cells is crushed by pressure, it breaks into a great number of fragments, of a round cellular form, (Plate I, 1, *b*.) Sometimes, however, the fragments have an angular character.

"Such are the usual appearances of these cells in the evacuations of Cholera; for in by far the greater number of cases they appear flattened, broken, and imperfect. They are collapsed, as if by exosmosis, and more or less disintegrated. It is very probable that this appearance is produced by their having undergone a kind of digestion, whilst passing through the alimentary canal.

"A very short time ago, I had an opportunity of examining the only perfect specimen of these cells which I have seen. In one of my earlier examinations I met with a large, well-developed cell, (Plate II, 1, *a*,) but this did not perfectly reveal the structure, and it is only lately that I have seen any which do this. Their walls were thick, and studded externally with numerous cells or buds. (Plate II, 1, *b*.) These appeared to be arranged in concentric circles. The cells being somewhat globular, the centre is first brought into focus, when it is seen to be occupied by two or three of these buds, with intervals between them, (Plate II, 1, *c*.) On gradually bringing the rest of the cell into focus, wider and wider circles of these buds are successively displayed, (Plate II, 1, *d*,) until the outer margin or ring of buds is brought into focus. The cells forming these circles are connected by very distinct concentric lines.

"The parent cell is seen to contain within it a mass of granules, which, in imperfectly developed cells, does not quite fill its interior, (Plate II, 1, *e*.) On crushing one of the parent cells, it gives exit to its contents, consisting of granular matter, somewhat resembling the most minute Cholera cells in appearance. (Plate II, 1, *f*.) Well-developed large cells of this kind are usually tolerably transparent, and of a dirty-yellow colour.

"I may mention, in conclusion, that the cells which Dr. W. Budd has detected in the water of Cholera districts, are usually of the large kind, and more disintegrated and imperfect than those which are generally found in the evacuations. They have in all probability escaped from sewers into the drinking-water, and there undergone a kind of maceration.

"It may be added, in support of our conclusions, that Dr. Brittan and myself have both examined the evacuations in cases of diarrhœa, which are clearly not traceable to the prevalent epidemic, and have invariably failed in detecting anything like Cholera cells. I have examined two very well marked cases, in which the evacuations were more fluid than those of Cholera. One occurred in an old man, suffering from chronic disease of the rectum; the other in a lady, during an attack of uterine phlebitis after delivery. In neither case was a trace of these bodies to be found.

"In the present state of the inquiry respecting the cause of Cholera, when so much remains to be done, it is almost useless to enter deeply into speculations with regard to its mode of propagating and of producing its effects. It seems very probable, however, from what we have seen of their development, that the Cholera cells have their habitat entirely in the alimentary canal, and do not enter the blood. They are most likely inhaled from the air, and swallowed with the saliva, or taken in with articles of food or water. When received into a healthy stomach, the converting power of which is strong, they perhaps undergo a kind of digestion, and are completely dissolved. But let the vital powers of that stomach be lowered by any depressing agent, such as insufficient food or clothing, fatigue, intemperance, fear, or miasmata of different kinds, and these bodies will acquire a rapid and prolific development, and produce, by the irritation of their presence, those copious discharges of serum and mucus which are so characteristic of the disease. In smaller quantities, they in all probability produce that diarrhœa which is so common at the time when Cholera prevails, and which seems to be only a modification of the same disease."

Dr. Brittan published an account of his observations in the *Medical Gazette* for September 28, 1849. In addition to adducing facts similar to those detailed by Dr. Swayne, he says: "Having been led to consider these bodies (which, from the characteristic of their appearance, I have named annular bodies) in some manner essentially connected with Cholera, I wished to ascertain whether it might be as cause and agent, or effect and product; that it could not be the latter, seemed evident at once, from the fact that they were unlike any of the known healthy or morbid elements of the body or secretions; and, as they were found in the vomited matters apparently in an early stage of development, it seemed probable that they were introduced from without, and would be met with in the atmosphere, etc., of places where Cholera was rife. Accordingly, with the view to test the truth of this supposition, on July 19, with the kind assistance of, and an apparatus suggested by, Dr. Bernard, I condensed about 3i of fluid from the atmosphere of a room in a house from which five patients had been removed, the day previous, to the Cholera hospital, and I found in it bodies" similar to those seen in ejected matters. "I soon after repeated the experiment, with the aid of Mr. Ralph Bernard, in a cell in the Bridewell, which had been unoccupied for some time, but adjoining cells the occupants of some of which had been seized with Cholera, one of whom died the day before. Here, also, the same result was obtained. The same experiment was then tried in situations free from Cholera, but with a negative result; the fluid here obtained was destitute of these bodies, and contained only small portions of hyaline, structureless matter, also observable in the first. I have since repeated these experiments, aided by Dr. William Budd, several times, with the same positive and negative results, and therefore feel justified in stating that the same will follow similar investigations made elsewhere, if the necessary care be taken, and a glass of sufficiently high power (I used a Ross's 1-12) be employed. The only question remaining is, as to the identity of the annular bodies thus shown to exist in the atmosphere of Cholera districts, and in the vomited matters and evacuations of Cholera patients. Most of those to whom I have shown the specimens entertain no doubt on the subject, and all seem to concur in their identity of form."

Mr. Quekett, of the Royal College of Surgeons, has expressed his belief in the fungoid nature of the bodies described.

Dr. W. Budd, in a letter published in the *Times* some days previously to the appearance of the papers by Drs. Swayne and Brittan, stated that he had found similar bodies in the water of the districts in which Cholera prevailed.

The Bristol observations have created great interest, and some have even rashly concluded that the bodies seen by Drs. Swayne and Brittan are the *fons et origo mali*. Many, however, of acknowledged reputation as microscopic observers, have either failed to detect the universal connection of the organisms above described with Cholera, or seem to have positively shown that they have no reference to the disease. At the meeting of the Microscopical Society, on October 17th, Mr. Busk "demonstrated that the large bodies figured by Mr. Swayne are nothing else than a species of *uredo*, a kind of smut frequently found on wheat, and specimens of which Mr. Busk found in a loaf of brown bread purchased at Greenwich. The uredo is not destroyed even by caustic potash, and it readily passes, unaltered, through the intestinal tract. The smaller, so called annular bodies, are not, according to Mr. Busk, sporules in an earlier stage of development than the larger bodies (uredo), but are evidently starchy granules derived from the bread eaten by the patients. In addition to the uredo and the starchy granules, Mr. Busk demonstrated, in a specimen of Cholera evacuation supplied by Dr. Swayne, the cellular structure of the inner coat of the bran of wheat."—(*Medical Gazette*, October 19th.)

While we cannot at once recognize the so-called cholera-cells as the cause of Cholera, we think there are many facts which tend to establish the probability of this and other diseases being either caused by, or intimately connected with, the dissemination of fungi; but of what form these organisms are, we are not yet in a state to determine. An immense number of observations must be made, in all possible varieties of place and circumstance, before any trustworthy result can be arrived at. Several forms of microscopic organisms (not merely different stages of development) have been discovered in the intestinal and renal evacuations of Cholera. Which of these —if any—is the true *Cholera fungus?* Time and experience can alone decide. We look to Drs. Swayne and Brittan for further elucidations.

EXPLANATION OF PLATE I. (MAGNIFIED 420 DIAMETERS.)

1. Large and small cells from same specimen of evacuation.
   - *a.* Large cell, as usually seen in Cholera evacuation, being broken, or more or less imperfect.
   - *b.* Fragments of do., ruptured by pressure.
   - *c.* Medium sized cells.
   - *d.* Ditto, ruptured by pressure.
   - *e.* Small cells.
   - *f.* Mucus, with hyaline basis.
2. Lithic acid and lithate of ammonia, from Cholera evacuation.
3. Oxalate of lime from ditto.
4. Phosphates from ditto.
5. Chloride of sodium (?) from ditto.

Etched by Dr. Swayne, from drawings taken by him from nature, to illustrate his cases.

EXPLANATION OF PLATE II. (MAGNIFIED 420 DIAMETERS.)

1. Large well-developed cells.
   - *a.* Large cells.
   - *b.* Large cells, showing a bud completely detached.
   - *c.* Ditto, the centre only in focus, so as to show the buds on its surface.
   - *d.* Another cell from same specimen, showing the buds on the surface.
   - *e.* Cells from same specimen, not completely developed.
   - *f.* Large cell ruptured, and giving exit to its contents.
   - *g.* Small cell, showing a development of buds externally.
   - *h.* Broken and imperfect cells from same specimen. Etched by Dr. Swayne, from nature.
2. Small cells from the atmosphere. Etched by Dr. S. from Dr. Brittan's drawing.
3. Imperfect cells from water. Etched by Dr. S. from an engraving in Dr. Budd's pamphlet.
4. Small cells from vomited matter. Etched by Dr. S. from a drawing taken by him from nature.
5. Cells from water. Etched by Dr. S. from an engraving in Dr. Budd's pamphlet.

M. BECQUEREL'S ANALYSES OF THE BLOOD, MATTERS VOMITED, ALVINE EVACUATIONS, AND URINE, OF CHOLERA PATIENTS.

When M. BECQUEREL's paper was in type (*Archives Gén. de Médecine*, October 1849), the author had not seen the valuable memoirs, by Drs. Parkes and Garrod, contained in the LONDON JOURNAL OF MEDICINE for February and May 1849; but the Editor has appended a short acount of them. In France it is less the custom, than in this country, to look into the literature of a subject before publishing on it; and a knowledge of English memoirs, in the original, is rare.

M. BECQUEREL examined the matters vomited in six cases; the dejections in four cases; and the blood in five cases. The results are given in the following tables:—

TABLE I.—SIX ANALYSES OF MATTERS VOMITED.

CASES.	Reaction.	Sp. gravity.	Water.	Solid matter in 1000grs. filtered fluid	Albumen in same.	Chloride of Sodium.	Matters not passed Filter.
1. F. æt. 30. Vomited 50 hours after attack ..	Neutral.	Not taken.	991·52	6·37	Not weighable.	2·35	2·11
2. M, æt. 23. Cholera of 8 hours duration: in midst of it vomited ..	Acid.	1006·03	991·02	7·04	Not weighable.	3·08	1·94
3. M. æt. 50. Cholera of 12 or 15 hours. Commencemt. of reaction.	Neutral.	1012 20	967·18	26 31	5·11	4 00	6·21
4. F. æt. 42. Cholera of 4 days: but vomiting dating only 48 hours.	Acid.	1015·53	960·20	31·63	18·40	8·24	7·47
5. F. æt. 45. Vomited 4 hours before death ..	Acid.	1017·20	954·42	26 68	7·25	5 25	8·90
6. F. æt. 28. Cholera for 8 hours.....	Acid.	1021·40	931·46	54·70	31.50	6·75	11·24

TABLE II.—FOUR ANALYSES OF THE DEJECTIONS.

CASES.	Reaction.	Sp. gravity.	Water.	Solid matter in 1000grs. filtered fluid.	Albumen in same.	Chloride of Sodium.	Matters not passed Filter.
1. F. æt. 30. Cholera of 50 hrs. (Had vomiting)	Alkaline.	1004·20	988 60	8 64	Not weighable.	3·7	2.76
2. M. æt. 44. In blue stage.....	Ditto.	1007·40	979 57	13 29	Ditto.	Not taken separately.	7·14 (with chlo. sod.
3. M. æt. 35. Cholera of 18 hours duration ..	Ditto.	1009 70	781·87	14·54	3·22	5 24	3·59
4. F. æt. 29. Cholera of 18 hours' duration ..	Ditto.	1011 04	982·83	15·12	4·51	7·81	2 05

TABLE III.—FOUR ANALYSES OF THE SERUM OF THE BLOOD.

CASES.	Sp. gravity.	Water.	Solid Matter.	Pure Albumen.	Chloride of Sodium.	Fatty Matters.	Salts and Extractive Matters.
1. M. æt. 29. Bled at the beg. of typhoid stage.	1041·50	888·30	111·70	63·10	12·26	4·70	31·70
2. M. æt. 26. Bled during reaction.	1035·10	901·79	98·21	48·21	7·38	4·23	38·48
3. M. æt. 30. Bled on the morning of death for cerebral congestion	1044·20	893·70	106 30	64·20	8·82	Not sep.	32·68
4. M. æt. 35. Bled seven hours before death for cerebral congestion ..	1035·10	886·60	113·40	88·66	Not sep.	Not sep.	28·74

TABLE IV.—TWO ANALYSES OF BLOOD.

CASES.	Sp. gravity	Solid Matter.	Globules.	Fibrin.	Pure Albumen	Chloride of Sodium.	Salts, Fatty and Extractive Matters.	Water.
1. M. æt. 30. Bled on the morning of his death.	1074·10	277·48	189·60	1·88	51·80	6 61	27·59	732·52
2. M. æt. 35. Bled on the morning of his death.	1075·00	245·05	160·20	6·50	69·35	Not sep.	20 00	753 95

First Table. The matters vomited were, in the six cases, whitish, resembling rice-water, and in all respects characteristic of Cholera. When filtered, they were separated into a solid residue left on the paper, and a perfectly transparent liquid, which passed through with very great ease. The former was composed almost entirely of coagulated albumen, having, however, attached to the fragments, some minute traces of mucus. The albuminous nature of the insoluble fragments was demonstrated in ways such as could admit of no doubt of their accuracy, both chemically and microscopically.[1] The solid matter, after having been washed several times in distilled water and alcohol, was dried and weighed. The quantity bore a relation, as Table I shows, to the quantity of matters held in solution by the filtered liquid. Another result is apparent, though less precise. It is this: that the quantity of solid matter detained on the filter, and kept in solution by the liquid which passed through, was found to have diminished, as a longer time had elapsed from the seizure. In 1000 parts of the liquid, the coagulated albumen varied from 1·94 gr. to 11·24 gr. The quantity of chloride of sodium, found in the matters vomited, was very great in proportion to the total quantity of matters in solution: it varied from 2·35 gr. to 8·24 gr. Compared with the amount of this salt which normally exists in the serum of the blood, there was found nearly three times less. It is necessary to make this comparison, because the quantity of water, both in the vomitings and in the stools, varied greatly, and bore a proportion to the quantity of drink given to the patients. [The only drinks were ice and Seltzer water.] As a summary of the six analyses, M. Becquerel considers the ejected liquid to be the serum of the blood diluted by a variable quantity of water, and containing fragments of albumen floating in it, (with a little mucus attached,) and a large relative quantity of chloride of sodium.

Second Table. The four dejections filtered easily, and left an insoluble matter on the filter, perfectly analogous to the insoluble matter of the vomitings. Indeed, a glance at Tables I and II will show an identity of characters in the matters vomited and passed by stool; with this difference, that the dejections were alkaline, from the presence of a small quantity of ammoniacal salts.

Third Table. In three cases in which the blood was drawn during advanced reaction, coagulation took place: in the other, this process was hardly discernible. The density of the serum was in all the cases above the natural standard: the solid matters being in increased, and the water in diminished quantity. The chloride of sodium was nearly one-third above its normal amount. The figures range from 7·38 gr. to 12·2 gr., in place of from 5 to 6 gr. The fatty matters were more than double: and the proportion of extractive matter was enormous.

Fourth Table. The blood flowed with difficulty. The beating required to be long continued to obtain the fibrin; which was in small proportion in

[1] The methods ought to have been fully detailed; as the chemical nature of the substance is still in dispute, and it is not to be settled by *opinions*, or a narrative of *results*.

one case. The difference between the amount of fibrin in the two cases cannot be explained. The large proportion of globules in both cases is striking.

Remarks on the Facts contained above. M. Becquerel considers, that in Cholera, it is undeniable that a certain quantity of the serum and solid constituents of the blood, especially of the albumen, is exhaled through the mucous membranes. The presence of *coagulated* albumen is probably the result of diminished alkalinity in some dejections, and the neutral or acid reaction of others. The cause of the abundance of chloride of sodium cannot be explained. There is less water in the blood, on account of the quantity thrown off from the intestines ; and this occasions a relative concentration of the globules, of the chloride of sodium, of the salts, and extractive matters. The notable diminution in the albumen of the serum, is explained by its presence in the intestinal discharges. The almost triple amount of fatty matters must be attributed to the rapid waste or absorption of fat, which takes place in Cholera.

The Urine. Six cases are thus briefly given.

Case i. A man, (hospital patient,) was seized all at once with the severe symptoms of Cholera, and died in twenty-four hours. No urine was passed, and none could be obtained by the catheter.

Case ii. A young man, aged 17, was treated at home by M. Becquerel, and died on the fifth day. On the two first days he was catheterized, but no urine was obtained. On the third, fourth, and fifth days, he passed urine spontaneously ; and on none of the days did it contain any trace of albumen.

Case iii. A young man died in hospital, on the sixth day, in a typhoid state. On the first day, no urine was obtained by the catheter ; on the second and third, a little was got ; and on the fourth, fifth, and sixth, he passed urine spontaneously. In the urine of none of the days was it possible to detect any trace of albumen.

Case iv. A patient, labouring under disease of the heart, was attacked by Cholera in a mild form, and without suppression of urine, which was never found to be albuminous.

Case v. A man came into hospital with intermittent fever, was seized with malignant (*foudroyant*) Cholera, and died in twenty-four hours. Half a teaspoonful of urine was got by the catheter. It did contain albumen, but in so small a quantity as to make its presence almost matter of doubt.

Case vi. A patient was brought into hospital eight or ten hours after seizure. By the catheter, urine was obtained on the first, second, and third days : it was small in quantity, turbid, acid, and contained a very notable quantity of albumen. On the fourth and fifth days he passed a little water spontaneously, which was nearly devoid of albumen. He was now well : and on the sixth day there was no trace of albumen in his urine.

From these cases M. Becquerel concludes :

1. That in a considerable number of cases, it is impossible to obtain urine from Cholera patients.
2. That in cases of great and of medium intensity, the urine may contain no trace of albumen.
3. That in certain cases, from the return of the secretion up to convalescence, it is persistently albuminous.

M. Becquerel's negative observations on the urine are of importance, as they are quite sufficient to render the presence of albumen in it, by no means a diagnostic sign, as to any case of serous purging being, or not being, Cholera. It is within our own knowledge that many others, besides M. Becquerel, have in vain searched for albumen in the urine of Cholera patients. As we know that albumen does not, in any disease, appear in the urine unless the kidneys are congested, the presence of albuminous urine in Cholera is, evidently though a common, only a contingent symptom.

The exhalation of albumen from the gorged capillaries of the intestines is a more important and characteristic phenomenon. The observations of M. Becquerel tend to strengthen the opinion that the "rice-water" fluids, vomited and passed by stool, are alike hæmorrhage. This fact ought never to be lost sight of in the treatment. By bearing it in mind, a physician apt in his resources, will save more patients than could be rescued by any specific.[1]

FUNGI IN CHOLERA URINE.

Various observers have recently noticed fungi in the urine of Cholera patients. They have been seen among others by Dr. R. Quain, (*Lancet*, Oct. 27th, p. 462); Dr. W. Herapath, of Bristol, (ib. 453); Drs. Cormack and Henry, (Westminster Society Reports, p. 1076 of this number;) and by Mr. John Grove, (*Lancet*, Oct. 20th,) who attaches great importance to them, as bearing upon the fungous theory of the disease. It must first be shown that the plant is special to Cholera, before Mr. Grove's theoretical views can be entertained. In the meantime we must say, that Mr. Grove deserves much praise for the zeal with which he is prosecuting the inquiry. The determination of the exact species to which these urinary fungi belong, does not seem at present to be of much importance with reference to Cholera, as Dr. W. T. Gairdner, of Edinburgh, (*Medical Times*, 27th Oct.), has clearly shown. The most common fungus we believe to be a species of torula: and if so, the fact is interesting. Perhaps, in Cholera, as in some other diseases, sugar is formed before the normal bio-chemical changes are fairly re-established. What is called *Diabetes* is not the only affection in which the urine is saccharine.

SURGERY.

CASE OF TRANSFUSION OF BLOOD.

The *Revue Médico-Chirurgicale de Paris* for August, 1849, has extracted from the *Journal de Médecine de Bruxelles* an account of a case in which the operation of transfusion of blood was performed by M. Bougard. The apparatus used was a modification of Blundell's, consisting of an elastic stem, about 50 centimètres in length, furnished at one extremity with a reservoir and stop-cock; the reservoir having a triangular base, so as to prevent rotation of the blood; the other extremity is provided with a simple canula, made so as to exactly fit a small tube of about an inch long, which is previously introduced into the vein.

Case. A woman, aged 28, of lymphatic constitution, was attacked in 1843 with hæmoptysis, for which she was very largely bled; after this she was subject to hæmorrhages from the mucous membranes. The blood had exuded by turns from the ears, nostrils, mucous membrane of the eyelids, of the lungs, intestines, genito-urinary passages, and even the skin; in short, the anæmia had become so intense, that the patient could not be moved from bed without the occurrence of syncope. All treatment having failed, transfusion appeared the only remedy, and was performed, on 30th September, 1847, by MM. A. Uytterhoeven and Bougard. The latter gives the following account of the operation:—

"The patient being placed on her back on a hard mattress, and the right arm being drawn from the trunk and placed on the bed, with its anterior surface upwards, I exposed the cephalic vein, for 6 or 8 lines just above the bend of the elbow, by means of a bistoury; I then opened it with a lancet, taking care to prevent the escape of blood; I then took the canula, which

[1] Vide Reports of Westminster Society, p. 1076, and 1082.

had been plunged in luke-warm water, and, placing my thumb on its orifice, so as to retain the liquid in it, I introduced it into the vein. It was held in with the thumb of the left hand, so as to prevent also the escape of the water which it contained. In the meantime an assistant had prepared the apparatus, by forcing a current of hot water through it, surrounding it with compresses, and then plunging it in hot water, so as to maintain a proper temperature. Another assistant opened the vein of a healthy young woman, of a sanguine temperament, aged 22 years ; the blood was received into the reservoir. The stop-cock being closed, the blood accumulated in the recipient ; when it had reached about two ounces, (this precaution is necessary to avoid the introduction of air, and the interruption of the stream of blood during the injection,) I opened the stop-cock, and, when the blood appeared at the lower end of the tube, I introduced the tube into the canula which had been placed in the vein. The blood thus passed directly from the veins of the healthy person to the patient. Two and a half ounces of blood were introduced. The operation was commenced at 6 minutes before 4, and ended at 4 o'clock precisely.

" Before the operation, the pulse had been usually 108 ; when the operation was commenced it was 120 ; and after its conclusion, 100. My colleagues, who had their fingers placed on an artery, observed the pulse become slower as the blood entered the vein. At 45 minutes after 4, the pulse was 96 ; and at 9 o'clock the next morning, it was 88. During and immediately after the operation the patient said that *she felt a hot liquid running through her body, and especially towards the heart ; also unusual heat.* She was ordered to rest, and attentively watched. Up to the 6th of October the state of the patient continued steadily to improve. She slept and eat well, and could raise herself in bed. She still had some hæmorrhage : the pulse varied from 80 to 88. On the 2nd, some iron pills were ordered. On the 6th, she expressed a wish to have the operation again performed. This was complied with, as the quantity injected the first time seemed scarcely sufficient to effect a cure, and the operation was performed on the 7th.

" On the former occasion, I exposed the vein extensively ; and its opening, and the introduction of the canula were easily and rapidly effected. This time, I wished to arrive at the same result by means of a small incision of about three lines ; but, when the vein was opened, it was impossible for me to introduce the canula, so that I was obliged to enlarge the incision. This caused a delay of ten minutes ; the patient lost some blood, and had a fainting fit, which lasted some minutes. The apparatus having been adjusted, three and a half ounces were injected, when the current stopped, from the stream from the vein being flattened, and part of the blood being coagulated in the narrowest part of the canula. I had intended to introduce four or five ounces. The diminution in frequency of the pulse was not so well marked as at the former operation, but the sensation of internal heat seemed more intense. The arterial pulsations were stronger than before the operation. The patient was much agitated the remainder of the day and the following night." She went on well for some time, menstruating healthily from the 17th to the 21st of October, and regaining her strength so much, as to be able to get up and assist the nurse in her ward. On the 15th of November, however, an excessive and obstinate metrorrhagia set in ; and, in a week, her strength was entirely prostrated. For some days also, at this time, there was observed to be an irregular febrile action—shivering, heat, and sweating : there was also detected the presence of a tumour, as large as the fist, on the left side of the lumbar vertebræ. These symptoms led to the opinion that there was an abscess in the sub-peritoneal cellular tissue. Transfusion could do no good in such a case. At last, the patient was attacked with violent pain in the abdomen : partial peritonitis set in, and she died on the 19th of February, 1848.

At the *post-mortem* examination, the *heart* was found flabby and softened ;

and it, with the vessels, was collapsed, containing a small quantity of liquid resembling red water. The *lungs* contained miliary tubercles, not softened. The left *pleura* was adherent in many places; and the pleura contained a yellow fluid, in which were flocks of purulent matter. The *abdominal* cavity contained a large quantity of serosity, holding purulent flocculi in suspension. On the left side, the intestines were adherent, and there was a perforation in the diaphragm where it was united with the false ribs. In the fundus of the uterus, closing the aperture of the right Fallopian tube, there was a whitish hard tumour, about half as large as a hen's egg, which grated under the scalpel (fibrous polypus). There was chronic engorgement of the ovaries.

Notwithstanding the death of this patient, the transfusion cannot be said to have been the cause, but rather to have been successful in effecting the object it was intended to produce. The re-establishment of the appetite in a few days, the return of all the functions to their normal state, so that, in three weeks, the patient was sufficiently recovered to work, to run, and to occupy herself in household matters,—in spite of the imprudent actions which she daily committed, as getting in a passion, and going to church, where she was exposed to a very low temperature, then returning to the ward, where the temperature was high,—these ameliorations were truly unexpected and remarkable. The apparatus of M. Bougard prevents the introduction of air; it also prevents the introduction of coagulated blood into the vein. To prevent the formation of clots, it is necessary to maintain the instrument at a proper temperature, by compresses dipped in hot water.

THE DEAFNESS OF OLD PEOPLE: ITS CAUSE AND CURE IN CERTAIN CASES.

M. Mutter believes that, in old people, there is a narrowing of the Eustachian tubes, caused by the propulsion of the condyles of the inferior maxilla—a narrowing which may be removed by the use of a set of back teeth, which, by opening the mouth, would replace the condyles. [*De Vriend van den Landman.*]

HOW TO GET RID OF THE PAIN AND SWELLING CAUSED BY THE STING OF A BEE.

The immediate application of honey is good; the use of indigo is better; and tobacco-juice, though we cannot speak of it from experience as of the other two, may be equally or more efficacious. It is thus recommended in *De Vriend van den Landman*:—"Apply the juice of tobacco as you find it in the mouth-end of a smoked cigar or in the reservoir of a German pipe. It not only immediately relieves the pain, but prevents swelling." The substance recommended is not, it must be remarked, the juice, but the empyreumatic oil; which, as the experiments of Dr. Morris (*Edin. Med. and Surg. Journal*) have shown, is a much more energetic poison than the juice.

REPORTS OF SOCIETIES AND ACADEMIES.

WESTMINSTER MEDICAL SOCIETY.

March 31, 1849.

Francis Hird, Esq., President, in the Chair.

The Fatal Cases of Inhalation of Chloroform. By Dr. Snow. Chloroform is much more powerful than ether, and this has been the chief cause of the accidents which have happened. The author detailed some calculations of the quantity of chloroform contained in the blood in the different stages of insensibility, and of the quantity that would cause death, and also of the quantity of vapour that might be present in the lungs at one time, the result of which calculations tended to show, that unless care were taken to dilute the vapour of chloroform largely with air, there might be so much of it in the lungs when the inhalation was left off, as would cause death by being absorbed, and added to that already contained in the blood. A handkerchief does not afford the means of regulating the proportion of vapour in the air breathed by the patient; and nearly all the fatal cases that have occurred must be attributed to this employment of the handkerchief in administering so powerful an agent as chloroform. When animals are allowed to continue breathing air, containing vapour of chloroform, after they are completely insensible, they shortly cease to breathe; but if there be not more than about five per cent. of vapour in the air they were breathing, the heart continues to pulsate for some time, and the circulation ceases only on account of the absence of respiration; but if about ten per cent. or upwards of vapour of chloroform be present, the respiration and circulation cease about the same time, in consequence of the quantity of vapour present in the lungs at the time the respiration ceased, being sufficient, when absorbed and added to that already in the blood, to paralyse the action of the heart. Under these circumstances artificial respiration can be of no avail; and there is reason to believe that these are the conditions under which chloroform has been fatal to the human subject.

The author then detailed the particulars of the fatal cases, in which it had been professionally administered. The following is a list of seven fatal cases: 1. Hannah Greener, Newcastle (*Ed. Med. and Surg. Journal*, April 1848); 2. Mrs. Simmons, Cincinnati, U.S.; 3. Young woman at Hyderabad, in Hindostan; 4. Female, aged 30, at Boulogne; 5. A case at Govan, near Glasgow, of which the particulars have not been published; 6. Boy, aged 17, at the Hôtel Dieu, at Lyons; 7. A labouring man, a dispensary patient in Westminster, under the care of Mr. Nunn's dresser. He was of opinion that these accidents might in every case be avoided by proceeding carefully, and by employing an inhaler which admits of the regulation of the quantity of air to dilute the vapour.

At the conclusion of the paper, Dr. Snow performed two experiments, to show the difference of the action of chloroform according to the quantity of air with which the vapour is diluted. In the first experiment, twelve grains of chloroform were diffused through the air in a glass jar holding 100 cubic inches, and a linnet was put in, which in half a minute was dead. In the other experiment, the same quantity of chloroform was mixed with the air in a jar holding 600 cubic inches, and another linnet was introduced: it became gradually insensible, but, being taken out at the end of about three minutes, it recovered in two or three minutes after its removal. Dr. Snow's paper is published at length in the *Edinb. Med. and Surg. Journal*, for July 1849.

April 7, 1849.

Francis Hird, Esq., President, in the Chair.

Observations on the Health of the Metropolis during the Winter of 1848-9, compared with corresponding months of the previous years. By Dr. Webster. So far from the fears entertained that the public health would suffer by the re-appearance of epidemic cholera, the aggregate number of deaths from all causes was less throughout London during the last six months, than during the same period of the previous year, particularly in regard to diseases of the respiratory organs, usually so prevalent and fatal in this country during winter and cold weather. Notwithstanding the extraordinary severity of scarlatina, and the presence of cholera, the gross mortality from all diseases met with in London, during the last six months, ending the 31st of March, was 30,263; whereas, during the parallel six months of the previous winter, the total amount rose to 36,060 deaths, being an excess of 5797 fatal cases of disease, or 18·82 per cent. in favour of the current season. The greatest difference occurred in diseases of the organs of respiration, from which (including influenza), in the winter of 1847 and 1848 the deaths were 11,197; whilst during the same six months, ending the 31st of March of the current year, only 5127 persons died from similar causes, being less than half the former amount, or an excess of 118·39 per cent. more deaths under this head in the previous winter than in that just terminated. The author then alluded to some of the pectoral diseases, and stated, amongst other interesting facts, that 1965 persons had died from pneumonia this season, instead of 3159 as in the previous, which gave an excess of 60·76 per cent. By bronchitis, 2047 died the last six months, whilst the number was 2984 in the former period, being 45·77 per cent. more than recently. Again, 3040 died from consumption this season, against 3740 in the winter of 1847 and 1848, being nearly one quarter more deaths from the same disease in the preceding year. By influenza, only 78 deaths occurred, in place of the unusually great mortality of 1739, registered during the former season. By measles, 391 persons died, instead of 1346, which thus caused three and a half times as many deaths in the previous winter, as in the one just terminated. Scarlatina formed, however, a very marked exception, in its great virulence and mortality, having proved far more fatal last winter than for many years. It was, in fact, the chief epidemic of the season; 2546 individuals, principally under fifteen years of age, having died from that virulent disease during the six months ending the 31st of March last, instead of 1362, during the parallel period of the previous year, although the mortality from the same cause was also then greater than ordinary. By typhus, the deaths were less this year than last, 1585 having died from that disease during the present winter, in place of 2201 the previous, thus making an excess of 38·86 per cent. more in the last than in the present season.

The great diminution in the mortality from typhus, is both an important and instructive fact, because the greater or less prevalence of typhus is a very fair indicator of the physical condition of a population; it is a good *nosometer* of the high or low health of a community.

Notwithstanding the existence of cholera, and the prevalent tendency to affections of the bowels, diarrhœa and dysentery had actually proved less fatal during the last six months than in the same period of the previous year. In the six months, ending the 31st of March, 1849, the deaths in London, by diarrhœa, were 554, instead of 644 in the same months of the year before; whilst by dysentery, 135 then died, in place of 116 recently. This contrast is curious, seeing that cholera has prevailed more extensively than usual in the metropolis, 984 persons having died in London by that epidemic during the last six months, whereas only twenty-one deaths from the same cause are recorded in the previous winter. The author then observed, that great as the above amount of deaths by cholera may appear,

it is not by any means so considerable as the mortality met with in the spring of 1832, when this malady also prevailed in London epidemically. For instance, during the month of March and the first week of April of the year above mentioned, as many persons died from cholera in the metropolis, as throughout the entire six months ending the 31st of March, 1849, according to the official report of the Registrar-General. Cholera having now almost ceased to exist as an epidemic in London, since only four deaths have been recorded from it during the week terminating last Saturday, the 31st of March, Dr. Webster believed little apprehension need be now entertained; and although probably, as in the year 1832, the disease may again become common next summer, or in the autumn, when cholera usually prevails in this country, it is then, for the most part, of a mild and less fatal description than the type it exhibited last winter, or previously.

From the various data detailed to the Society, the author considered that, notwithstanding the recent prevalence of cholera, and the unusually great mortality by scarlatina, London had not become by any means unhealthy, nor had last winter proved insalubrious, if compared with previous seasons, especially with those of 1847 and 1848, when almost every class of disease was both more prevalent and fatal than at any former period, even, he thought, since the time that the plague was epidemic in the metropolis.

Diathesis. Speaking generally, from his own observation, as likewise from the information of other physicians, Dr. Webster believed that almost every complaint recently met with assumed an asthenic character—if not on the first supervention of disease, at least soon afterwards; and even in those instances of acute complaints which are in appearance, or even really, inflammatory, they very often soon exhibited symptoms of great debility and exhaustion—similar, in fact, to the peculiar type noticed when the influenza was so prevalent last year in the metropolis, and in many parts of England. Scarlatina, measles, and diseases of the respiratory organs, come all within this category, requiring very different management from that formerly found beneficial.

Dr. Webster observed, that although scarlatina was really one of the most prominent and serious epidemics prevalent during the last six months, whereby nearly three times as many persons were carried off as by cholera, still the latter malady occupied by far the most public attention. The present management of scarlatina differed essentially from the method other practitioners, like himself, had formerly found it expedient to employ. In previous epidemics, it was frequently necessary to resort to low diet, active purging, and even to bloodletting, either from the arm, or by leeches. During the recent epidemic in London, however, so far from depletion being required, or admissible, it was often found advisable to commence very early supporting the system, giving tonics, ammonia, wine, and sometimes even brandy, even where the symptoms, apparently, but not actually, seemed inflammatory. Debility, depression, and a great want of tone in the system, were generally characteristic of the malady, and the best remedies were the above. Although still above the average of previous seasons, the mortality is not so great as it was about the latter part of the last, and the early portion of the current year. At whatever period the present epidemic scarlatina may terminate, medical practitioners will not fail to remember its *great prevalence, rapid progress*, marked symptoms of *debility*, and its unusually *fatal character;* as, likewise, that the tonic stimulating plan of treatment was almost invariably required.

April 14, 1849.

Francis Hird, Esq., President, in the Chair.

Abscesses in the Kidneys in Scarlatinous Dropsy. Dr. Cormack exhibited a left Kidney, taken from the body of a male child, aged seven

years and ten months, who had laboured under Scarlatinous Dropsy, and whose death occurred on the fiftieth day from the attack of Scarlet Fever. The urine had been intensely albuminous, and was, on one occasion, suppressed for seventy hours. Some days before death, pus was found in the urine. The left Kidney contained a well-defined circumscribed cavity at the lower part, which would admit of a large hazel-nut; there was also a smaller cavity of the size of a small pea, communicating with the other. Both cavities were chiefly filled by dirtyish white matter, somewhat resembling cerebral matter in a state of softening. Along with this, in the passage between the cavities, and in the pelvis of the Kidney, there was fluid pus. The dirtyish white matter examined under the microscope was found to contain much epithelial debris. The whole Kidney was much diseased. The cortical substance was pale, anæmic, shrunken, and horny, and the pyramids (as contrasted with the surrounding tissues) looked red and turgid. This case is given at length in the "London Journal of Medicine," May, 1849.

Pathological Condition of the Blood in Cholera. By Dr. Garrod. The author divided his communication into two parts. In the first, he spoke of the investigations which had been made previously to the present year, and gave the results arrived at by Dr. O'Shaughnessy, Dr. Thomson, of Glasgow, and Dr. Clanny, in this country, and by MM. Rose and Wittstock, Lecanu, and others, on the Continent. In the second part, he detailed the post-mortem appearances, together with the examinations of the blood and evacuations in those cases which had fallen under his notice during the present epidemic.

Dr. Garrod stated that, although our knowledge of the changes which occur in the blood during cholera, was confessedly very imperfect, yet that sufficient was known on the subject to enable us to distinguish this disease from any other, and to solve the following problem: "Given a specimen of the human blood, to determine whether it was derived from a cholera patient."

[This elaborate paper is published in the London Journal of Medicine, May 1849.]

April 21, 1849.

Francis Hird, Esq., President, in the Chair.

Position of the Viscera, Configuration of the Body, and the Movements of Respiration in Chest Disease. By Dr. Sibson. The author's remarks were based upon, and illustrated by, a series of nearly forty diagrams, which had been taken from the dead and living body by himself, by means of a tracing-frame suggested to him by Dr. Hodgkin.

It is self-evident, that the knowledge of the normal is essential to that of the abnormal. In the healthy man, the important organs are all so placed in relation to each other, and to the parietes, that there is a common centre, around which they all, as it were, cluster. That centre is the lower end of the sternum; and the recollection of it is at once easy and important. Just above the lower end of the sternum, is the lower boundary of the heart, and the lower margin, coming to an angle, of the right lung. Just below the part indicated, is the upper boundary of that portion of the liver which is immediately behind the parietes. A line drawn from the lower end of the sternum, to the right, runs along the lower margin of the right lung; a line from the same point, to the left, indicates the lower boundary of the heart; the liver and stomach being immediately beneath those lines. The configuration of the chest, happily, indicates the size and outlines of the internal organs, so that they can be distinguished by the ocular inspection of the body,—the bulk and size of the organs being made apparent by certain prominences, and their boundaries by certain depressions. The lower margin of the right lung, and the lower boundary of the heart, correspond to depressions passing across the sixth costal cartilages, to the right and left of the

lower end of the sternum. The costal cartilages immediately in front of the heart, are more prominent than those over the middle lobe of the right lung. The ribs over the liver and stomach, to each side, are more prominent than those over the right and left lungs ; the hepatic and gastric bulges are thus formed, the existence of which was first pointed out by Dr. Edwin Harrison. During inspiration, the position of all the viscera is changed, the diaphragm, in its descent, drawing downwards the base of each lung and the lower boundary of the heart, and pushing downwards the liver, spleen, stomach,—and, indeed, all the abdominal and pelvic organs. At the same time, the costal area of the chest everywhere enlarges. During a tranquil inspiration, the superior ribs, which perform thoracic respiration, move forward from two to six-hundredths of an inch, while the abdomen advances about three-tenths of an inch, indicating diaphragmatic respiration ; at the same time, the lower, or floating ribs, move outwards about one-tenth of an inch, their motion being greater than that of the superior ribs. Their action is to expand the lower part of each lung simultaneously with the descent of the diaphragm, and they are truly diaphragmatic ribs. During a deep inspiration, the descent of the diaphragm, and the advance of the whole of the front of the chest and abdomen, is about one inch ; consequently, while the thoracic respiration is increased twentyfold, the diaphragmatic is only increased threefold. The base of each lung, and the lower boundary of the heart, are about an inch lower, when the diaphragm is at the lowest ; at the end of a deep inspiration, the liver, stomach, and spleen, are pushed down to a like extent. To observe the respiratory movements with greater nicety, Dr. Sibson devised the chest-measurer, an account of which is contained in the last volume of the *Medico-Chirurgical Transactions*. If the organs be in the position, and the chest be of the configuration indicated, and if the respiratory movements be symmetrical and normal in extent, we have the assurance, so satisfactory both to the medical man and the patient, that there is no organic disease of the heart and lungs. This important information can usually be gained with sufficient accuracy by means of ocular inspection and percussion, by the application of the hand during respiration, and, if needful, by the use of the chest-measurer. When the stomach and intestines are much swollen with flatus, they push up the diaphragm, and compress the lungs and heart upwards into the chest. The lower boundary of the heart and the lower margins of the lungs are then unusually high, being, in cases of extreme distension, about an inch higher than usual. The form of the chest and abdomen is changed in proportion to the distension, the abdomen being full, rounded, and tense, while the chest is flattened in front, and widened sideways. In cases of the class referred to, a chain of morbid sensations in the chest is often referred by the patient to disease in the chest itself, though it is really due to the abdominal distension : both dyspnœa and palpitation caused by the physical compression upwards of the heart and lungs ; and in the train of symptoms, headache, dizziness, and even unconsciousness are often occasioned by the difficulty with which the blood returns from the head to the right side of the heart. If the stomach and intestines be unusually empty, the diaphragm, instead of being raised, is lowered, and the lungs and heart, instead of being compressed upwards and shortened, are lowered at their base and lengthened. In bronchitis, and vesicular emphysema, the lungs and the heart, especially its right cavities, are enlarged. In extreme cases they are larger, and their lower boundaries are lower than they are in health during the deepest possible inspiration, the change in position amounting, in some cases, from an inch to an inch and a half. The whole diaphragm being lowered, the liver, stomach, and spleen, and indeed all the abdominal viscera, are correspondingly low in their position. The configuration of the chest is at the same time correspondingly changed. The enlarged condition of the lungs and heart is indicated by the marked and barrel-like roundness and fulness of the chest, especially at its upper part ; for while that part is prominent, the lower end of the sternum and the upper part

of the abdomen are unusually hollow. In the emphysema of childhood, the sternum is most prominent some little way above the lower end; in that of manhood, the greatest projection is at the junction of the two bones of the sternum; while in that of old age, the lower end of the sternum and the xiphoid cartilage are the projecting parts. The respiration of persons affected with emphysema is very characteristic; they are already, as it were, almost at the top of their breath, and they breathe with labour. The motion of the upper part of the chest is usually somewhat increased, but the lower end of the sternum, and the adjoining cartilages, instead of advancing, actually fall back. The same remarkable phenomenon is observed in cases requiring tracheotomy, when the obstruction to respiration in the larynx is extreme; in one case of that class, the whole of the walls of the chest fell backwards, instead of advancing during inspiration, at the same time that the abdominal motion was unusually marked. The cause of this falling back of the walls of the chest, during inspiration, is evident; the diaphragm, by its descent, lengthens the lung, and, as air can only enter the air-cells with difficulty, the lung collapses, and the costal walls over them collapse also, being forced backwards by atmospheric pressure. In extreme laryngitis, as in emphysema, the lungs are lengthened, owing to the action of the diaphragm; but while the lungs are amplified in emyhysema, they are narrowed in laryngitis, and the chest is consequently lengthened, flattened, and narrowed; at the same time, the heart, being denuded of lung in front, comes into extensive contact with the walls of the chest, and the heart's impulse is therefore felt extensively; whereas, in emphysema, it is only to be perceived behind and below the xiphoid cartilage. When much fluid is effused into one side of the chest (as has been observed and well described by several authors), the fluid necessarily compresses the lung on the affected side, and all the neighbouring organs are pressed aside from their usual position. If the effusion be on the left side, the heart is displaced to the right of the sternum, and the stomach, spleen, and liver, are displaced downwards, and to the right; at the same time, the ribs are pushed outwards and separated farther from each other by the contained fluid; consequently, the whole of the affected side is enlarged. The respiratory movements are remarkably affected; while those of the whole of the healthy side are exaggerated, those of the affected side are either lessened, arrested, or reversed. When the effusion disappears, it is interesting to notice the progressive return of the viscera towards their normal position. If, while the fluid disappears, the lung does not regain its power of expansion, but remains permanently condensed, the displaced organs will return beyond their former position, and in part occupy the place previously occupied by the condensed organ; consequently the margin of the healthy lung and the heart will be drawn abnormally to the affected side, and the abdominal organs will rise unusually high into that side of the chest; at the same time, while the opposite side is enlarged, the affected side is narrowed and flattened. The respiratory movements are at the same time restrained or annihilated on the affected, while they are exaggerated on the healthy side. If the upper lobe be the seat of tuberculous cavities, while the lower lobe is comparatively healthy, the position of the viscera is not materially changed; but the ribs over the affected part are flattened, and their respiratory motion is diminished. If the lower lobe be the seat of pneumonia, while the other parts are healthy, the affected lobe is permanently enlarged; the thoracic organs are not materially displaced; the walls of the chest on the affected side are somewhat fuller than usual; and the respiratory movements of the ribs, especially the diaphragmatic or lower ribs, and of the abdomen on the affected side, are restrained, while those of the whole opposite side are exaggerated.

Dr. Sibson described the position of the viscera, the form of the chest, and the movements of respiration in pericarditis; in enlarged heart, without pericardial adhesions; and in enlarged heart, with pericardial adhesions. He ex-

hibited two men, one healthy, the other affected with tubercular disease of the whole left lung. In the former, the position of the viscera, the form of the chest, and the movements of respiration, were symmetrical and normal; in the latter, the inner margin of the right lung encroached on the affected side, being considerably to the left of the sternum: the whole of the left side was narrowed and flattened, while the right side was unusually developed; and the respiratory movements, both thoracic and abdominal, of the whole of the affected side, were almost annihilated, while those of the opposite side were, throughout, exaggerated.

April 28, 1849.

Francis Hird, Esq., President, in the Chair.

Subacute Inflammation of the Ovaries and Fallopian Tubes, a cause of Sterility. By Dr. Tilt. This paper was published at length in the London Journal of Medicine for June 1849.

Extra Meeting, May 5, 1849.

Francis Hird, Esq., President, in the Chair.

Dr. Tyler Smith exhibited an Instrument that he had invented for Deobstructing the Fallopian Tubes in cases of sterility arising from their obstruction or occlusion at the uterine extremities, by thickened mucus, or other impediments. The instrument, in the use of which the speculum is always required, consists of a small silver catheter, bent like the uterine sound, to adapt it to the curve formed by the uterus and vagina, and having a sudden lateral curve at the distal extremity, to the right hand, or to the left, so as to point, when *in situ*, to the uterine mouth of the Fallopian canal, which it is proposed to examine. Through the catheter, a fine, flexible, whalebone bougie is passed into the Fallopian tube. When the small bougie is thus passed, so as to project at its Fallopian extremity, the instrument represents accurately the singular direction taken by the generative canal, from the mouth of the vagina to the fimbriated extremity of the tube. This novel operation proposes to bring an important organ under treatment, which has hitherto been removed from all interference, but is one requiring extreme caution in its employment.

Seat and Treatment of Stricture in the Urethra. By Mr. Henry Smith. It is generally inculcated in the works of most writers on Stricture, that the seat of this affection is most commonly the membranous portion of the canal; but there is some error in this, as is evident by an examination of the preparations of Stricture of the Urethra, preserved in the various museums of the metropolis. Of ninety-eight specimens, he found that the seat of Stricture was in the membranous part in twenty-one instances, whilst in seventy-seven the obstruction was in front of the triangular ligament, in various parts of the urethra, but most frequently at the bulb, or just in front of it. The conclusion, from the examination of these cases is, that the general opinion respecting the seat of Stricture is incorrect, and that it is to be met with much more frequently in the bulb, or just in front of it, than in the membranous portion of the canal. An excellent anatomist (Mr. Hallett) had examined the specimens in the Museum of the College of Surgeons with him, and agreed with him respecting the seat of the disease. He was also supported by John Hunter and Astley Cooper; the former found Stricture most frequently in the bulb, the latter, just in front of the bulb. Some consider that injections are liable to produce Stricture; but the author believed that a proper use of injections rather tends to prevent Stricture, as they no doubt overcome the chronic inflammation of the canal, in which it originates. Some forms of Stricture, especially the painful and irritable, are rendered obstinate, and the treatment unsatisfactory, by the too frequent introduction of instruments; and in those cases where the obstruction is recent,

and there is a tendency to hæmorrhage, great caution is requisite. In impermeable and undilatable Strictures, and those accompanied with perinæal fistulæ, it is necessary to resort to the operation of *urethrotomy*. There are two modes of performing it: the first, by dividing the Stricture from within by a concealed blade; and the second, by cutting through the perinæum. The former operation might be useful in cases of Stricture near the orifice, and in the spongy portion; but it is a dangerous measure in Strictures at the bend of the urethra, as the surgeon is working in the dark. Dividing the Stricture from without through the perinæum is the safest and best method. Mr. H. Smith had lately seen several instances, in the practice of Mr. Fergusson, when the operation had been performed with immense benefit. The use of the bougie, or catheter, should be cautiously kept up for some time.

Extra Meeting, May 12, 1849.

Francis Hird, Esq., President, in the Chair.

Renal Toxæmia. Dr. Routh exhibited the kidneys of a patient, and gave the following account of the case. He had been under treatment at the Royal Free Hospital for obstinate vomiting and constipation. He had taken hydrocyanic acid and croton oil pills without effect, and gradually became reduced to an extremity of weakness. Dr. Routh saw him for the first time on the 9th of May. He had had an ulcer in the thigh, which had healed. He had been ailing, more or less, for twelve months, though not prevented from following his occupation as a painter. For twelve years, he had suffered occasionally from what he called a stricture. He had never had syphilis, gonorrhœa, and had never used injections. Sometimes he was able to pass his water in a full, sometimes only in a scattered stream; sometimes it would stop suddenly. The urine was sometimes very dark, and he lately had occasionally passed blood. His habits were regular. The fatal attack began about ten days ago, before Dr. Routh saw him, with vomiting, and constipation unrelieved by medicine. His countenance was such as is considered symptomatic of malignant disease; his intellect was clear; he was sleepless; the heart's sounds were weak; the pulse was very feeble and frequent. He was much troubled with hiccough, which came on in paroxysms of half an hour to an hour, and were brought on by any exertion in talking or attempt to swallow food. He could not keep anything, liquid or solid, on his stomach; the abdomen, somewhat tympanitic, was soft, except in the region of the transverse and descending colon, where it was harder. There was no pain in the epigastrium or loins; although about a fortnight previously he had complained of some pain in the latter region, which had yielded to a mustard poultice. He was ordered creasote, dilute prussic acid, āā, m. iij, to be taken every two hours in half a fluid ounce of water; a croton oil pill every six hours; and to take gruel or arrow-root, with wine, by teaspoonfuls at a time, and frequently. On the 10th, the hiccough was less, but the sickness no better. He had had no motion: he complained of great weakness, and was pulseless at the wrist: the heart's sounds were regular. He was ordered to have wine and ammonia, and a turpentine injection immediately. He became insensible towards night, and died at 11 P.M., the bowels not having been relieved.

Post-mortem examination, thirty-three hours after death. *Head.* There was some fluid in the sub-arachnoid tissue, and about half a fluid ounce of clear serum was contained in all the ventricles together. *Chest.* The right auricle of the heart was exceedingly thin; the cavities of the heart contained large polypi. The lungs were healthy. *Abdomen.* The intestines contained some fluid and solid fæces; the jejunum had its villi very prominent, and somewhat softened. The left kidney was larger than natural, the capsule tearing off readily and cleanly. On section, the substance of the kidney was mottled white here and there, especially in the pyramidal portion, which appeared striated and was hard yet somewhat elastic. Here

and there were other patches of a tubular form, about the thickness of an ordinary quill, very white, varying in length from two lines to half an inch, containing granular and calcareous deposits. The right kidney presented the same general appearances on section. In addition to the preceding appearances, one or two pouches in the pelvis of the kidney, somewhat dilated, and a small cavity about the size of a pea, in the substance itself, were observed, containing sanguineo-purulent fluid. The ureters were healthy. The bladder was contracted, and rather thickened in its coats, and contained about half a teacupful of clear urine, with a sanguineo-purulent sediment. The posterior and inferior surface of the right kidney was adherent to the psoas muscles, between which and it, and extending as high as the twelfth dorsal vertebra, and as low as the pectineal line, was a collection of pus; a portion was also superiorly infiltrated in the muscle itself. The liver, spleen, and pancreas were healthy. The *vertebræ* were healthy: the *urine* had a feeble alkaline reaction. The opening in the prepuce was scarcely perceptible; between it and the glans, there were a little clear mucus and blood. No stricture could be detected in the urethra.

The case was important, inasmuch as the urgent symptoms during life were rather those of intus-susception or strangulated hernia, than of abscess in, or around, the kidney; nor did it clearly appear, how the secondary abscess had been produced, or should have been so suddenly fatal. The cicatrix of the ulcer in the thigh was examined, and found to be superficial; nor was any pus or diseased bone found in its neighbourhood.

Puerperal Convulsions: their dependence on Toxæmia: explanation of their more common occurrence in Primiparæ. By Dr. Cormack. Dr. Cormack detailed the history of three Cases of Puerperal Convulsions, which had occurred in his practice. The main object of his paper was to point out the connection which exists, in a very great proportion of cases, between Renal Congestion and Puerperal Convulsions. He considered Puerperal Convulsions to be—though not always, yet generally—the toxicological results of non-elimination of the excretions of the blood; and that, in by far the greater number of cases, this non-elimination depends on renal congestion, caused by the pressure of the gravid uterus. Œdema and albuminuria are frequent concomitants or precursors of convulsions, as shown by Dr. Lever and MM. Devilliers and Regnault. The gravid uterus, or any tumour pressing on the renal veins, must cause congestion of the kidneys and consequent toxæmia; and this is the more injurious to the pregnant woman, as her blood requires an extra degree of depuration, both from excrementitious matter from the fœtus, and also from the elements of the milk. Retention of these should, Dr. Cormack thought, be considered as the cause, not only of convulsions, but also of various other distressing symptoms occurring in pregnancy. Uterine epilepsy probably often arises from toxæmia; and the suppression of the lochia may induce post-partum Puerperal Convulsions. When convulsions recur *after* delivery, we must suspect structural renal disease. The explanation of delivery generally arresting convulsions, is not so much that uterine irritation is lessened, as that the hyperæmic state of the kidneys is relieved. The most common subjects of Puerperal Convulsions are strong, healthy young women, pregnant for the first time; and an examination of the cases recorded by authors proves this fact. In them, the abdominal walls are most unyielding, and unable to relax under the pressure of the gravid womb. Cases of Puerperal Convulsions in subsequent pregnancies might be either toxæmic or non-toxæmic. The toxæmic cases may be classed under the following heads: 1. Persons who have never gone to the full time; 2. Persons of extreme muscular development; 3. Persons suffering from structural disease, or obstruction of the kidney; 4. Excessive volume of uterine contents, including twin cases, etc. Dr. Cormack was desirous of drawing attention to toxæmia as a cause of Puerperal Convulsions, and also of recognizing

non-toxæmic Convulsions. He thinks that Dr. Tyler Smith, who has treated this subject more philosophically than any preceding writer, has, while recognizing toxæmia, attached too little importance to it.

[Dr. Cormack's memoir was published in the London Journal of Medicine for June, p. 522.]

Dr. Tyler Smith expressed his sense of the importance of the view taken by Dr. Cormack. He considered it would be difficult to estimate too highly the influence of impurity of the blood, as a direct irritant of the nervous centres in pregnancy. It was necessary to take a comprehensive view of the causes of blood-poisoning dependent on the pressure of the gravid uterus. There was the pressure on the intestinal canal, causing constipation; there was the pressure upon the emulgent veins, causing albuminuria, and the retention of urea in the blood; there was the pressure upon the hepatic vessels, which he had frequently observed to produce pink deposits in the urine; and lastly, there was deficient oxygenation of the blood, from pressure upon the thoracic viscera. All these agencies interfered with the proper depuration of the blood in advanced pregnancy, and often produced distressing nervous symptoms. But it was curious to observe, that during pregnancy, certain vicarious or complementary secretions were set up, which tended to preserve the blood in a healthy state. There was the sickness and vomiting of pregnancy, the salivation which sometimes occurred, the increased action of the glands of the axillæ and of the skin generally, and the secretion of milk by the mammæ, which was sometimes profuse during the latter months, particularly in cases of albuminuria. All these actions tended to compensate, and were no doubt intended to compensate, for the effects of pressure upon other organs. The fœtus must also be considered as an excretion, so far as the mother is concerned; and a large quantity of matter, which would otherwise have to be eliminated as *effete* from the maternal blood, went to form the liquor amnii, the membranes, the bones of the fœtus, the meconium, fœtal urine, etc. These points required consideration in our estimate of the state of the blood in gestation. Still, there could be no doubt that in many cases an impure state of this fluid, a true toxæmia, did obtain, and affected the spinal centre, the organ of convulsions, in a centric or direct manner. He believed this to be a predisposing rather than an exciting cause. It was only when the toxæmia was very intense, as in poisoning by carbonic acid, that convulsions, depending solely upon the state of the blood, occurred. If it were otherwise, convulsions would often occur independently of the excitement of parturition. But we generally saw that convulsion was actually excited when the predisposition existed, by some manifest irritation acting in a reflex manner, such as the irritation of the parturient passages during labour, or irritation of the stomach, bladder, or intestines. He said this with the fullest recognition of the importance of Dr. Cormack's views, particularly in first pregnancies, but he wished to guard against their too exclusive application.

Extra Meeting, May 19, 1849.

Francis Hird, Esq., President, in the Chair.

Two Small Maggots, from the Ear of a gentleman, were exhibited by Dr. Routh. This gentleman held the office of superintendent in some gold mines in Brazil. Being engaged, on a Thursday in October 1846, in reading, he was tormented by a fly, at which he struck with the palm of his hand, and accidentally pushed it within the meatus auditorius. He was not able to extract it till four or five minutes after, when his daughter succeeded in doing so by means of a small forceps. The fly came out entire, excepting one leg, and alive; it was seen by every member of the family, and recognized to be a *musca carnaria*, or flesh-fly. On the same evening, the gentleman began to feel an uneasy sensation in his ear, which went on from bad to worse, until the internal ear became exceedingly painful. The sensation was

as if there was something like a gnawing or rasping of the drum. The natives around him stated that maggots had been found in the ear. An English medical gentleman was sent for, who ordered a few drops of solution of opium, in dilute nitric acid, to be instilled into the ear. The pain and gnawing, however, were in no way relieved. On the Saturday, at 4 P.M., he was seized with a convulsion: he moaned terribly, plunged his head in his pillow, bending forcibly the joints, and rolling the eyes; the general character, however of the spasmodic movements were clonic; the convulsion lasted from seven to ten minutes. The medical gentleman called the same evening, with a forceps, extracted a living maggot, and ordered a weak solution of bichloride of mercury to be applied within the ear. The rasping, gnawing, and pain continued. At 11 P.M. the same evening, another convulsion occurring, further medical aid was called in, and, on consultation, it was agreed to apply white precipitate, suspended in milk, to the ear. This was done, and somewhat relieved the pain; soon after, two other maggots came out alive. On the Sunday morning another convulsion occurred, but much less violent; the same day a fourth maggot dropped out, also alive. From this time, all the acute pain subsided, but slowly at first, as a purulent discharge continued to flow from the ear, but which at last yielded to injections and counter-irritants. The patient finally recovered in about six weeks, but had remained deaf in that ear ever since. The case related was very interesting: 1st, as showing the short space of time in which the ova were deposited, the fly not having remained in the ear more than five minutes; 2nd, as showing the rapidity in which they were hatched in the ear; 3rd, as exemplifying the non-poisonous quality of the cerumen to maggots of musca; and, lastly, as indicating the danger of delay, and the efficacy of white precipitate as a means of cure. Two cases only were recorded in Cooper's *Surgical Dictionary*, in one of which convulsions also were present, but in neither was the history of the first deposition of the ova given, which in this case was distinctly traced to a *musca carnaria*.

The Operation for Strangulated Hernia. By Mr. Hancock. The recommendation for not opening the sac, he stated, had recently been brought prominently under the notice of the profession, and had at various times been ably advocated by Petit, Le Dran, Monro, Sir C. Bell, Bransby Cooper, Aston Key, Luke, and Gay, in whose hands it had been successful, particularly in those of Mr. Luke; whilst the statistics advanced by the latter gentleman certainly appeared, at first sight, greatly to favour this mode of proceeding. On the other hand, it has also been as ably opposed by men of eminence—viz., Dupuytren, Richter, Hey, Heister, Sir A. Cooper (excepting in old and large incarcerated Hernia), Lawrence, Liston, and Lizars, and more recently by South. A closer inquiry, however, into the statistics and arguments adduced in favour of this operation, tends greatly to diminish its claims to superiority, and proves that the mortality after operations for Strangulated Hernia depends, in most instances, upon causes entirely independent of the operation; that opening the sac does not, in reality, increase the danger, but that, on the contrary, the advantages of this method are so great, that, as a general rule, it ought to be adopted as the safer mode, and as presenting the greater certainty of success. It having been urged by the advocates of Petit's operation, that by its adoption we avoid the following dangers—viz.:

"Peritoneal inflammation, consequent upon the exposure of an inflamed or strangulated portion of the bowel, which, according to Key, is the cause of death in the majority of cases;

"Hæmorrhage into the cavity of the abdomen, should a vessel be wounded;

"Risk of wounding the intestine;

"Opening the sac, and thereby laying bare the peritoneal cavity of the abdomen;

"Immediate manipulation of parts so important to life; and, according to Gay, inducing unhealthy processes in the external wound";—

the author asks, in the first place, are these objections valid or tenable? Have not the surgeons in question, in their anxiety to support their own particular views, overlooked the real causes of failure, and grasped at the shadow whilst they neglected the substance? The published records of Strangulated Hernia cause a feeling of surprise in the minds of the readers, not that the mortality has been so great, but that it has not been greater; as every rule of good practice, of common sense even, appears to have been violated in the treatment of these cases. When strangulation took place, instead of early relieving the stricture, the patient was left until almost dead; the surgeon, in the meantime, torturing him in all manner of ways, in order to prevent the necessity of an operation, which was at last obliged to be performed under every disadvantage, the gut being bruised, inflamed or mortified, and the patient in a state of collapse, worn out by suffering, and by the prolonged, yet abortive, attempts at reduction. When the intestines, from the injury sustained, had lost their power of action, they were still more irritated and injured by the exhibition of purgative medicines, both before and after the operation; yet those who pursued this practice, would most strenuously have deprecated the employment of purgatives in cases of idiopathic enteritis. Again, notwithstanding the patient was almost in a state of collapse, from the severe constriction exerted upon the intestine, his vital powers were still more depressed by the exhibition of tobacco, (either in solution or in fumes,) tartar-emetic, and other equally destructive agents. These points have been all lost sight of; even mortification and rupture of the intestines, and disease of vital organs, have been overlooked; and deaths occurring under such circumstances have been ascribed, not to their true cause, but to the opening of the sac, and classified accordingly.

With respect to the remark made by Key, "that in the usual operation, the majority of fatal cases are consequent upon the exposure of the inflamed or strangulated portion of the bowel caused by opening the sac", Mr. Hancock observed, that the history of Strangulated Hernia proves, by every-day experience, that the peritoneum may be cut with impunity. He is willing to admit that, if the healthy peritoneum be cut or irritated, peritonitis may be induced, although this even does not always occur; but he argued, if an inflamed peritoneum is cut, the inflammation does not necessarily increase, especially when that inflammation results from some exciting cause removable by the incision. The operation then becomes a relief to the patient; whereas, when made in the healthy peritoneum, it inflicts a violence on the part. He is supported in this belief by the observation of Sir Charles Bell, that a peritoneum, when diseased, may be cut with greater impunity than when in health, The abdominal sections in ovariotomy prove this; the removal of large portions of omentum prove it; the operations of paracentesis abdominis prove it; and the success which attended the author's case of cæcal disease also tends to strengthen the position. Again, in reply to the question, is the general peritoneal cavity laid bare by opening the sac? the author observed, that the communication between the sac and abdomen is completely closed by the protruding gut or omentum, and that, even when the intestine is returned, it lies so close to the ring, that very little, if any, air can gain access to the abdominal cavity, even should it prove injurious in so doing, of which he had great doubts, having had patients under his care who, from wounds, have had the abdominal cavity exposed for a much longer time than would be required for the operation for Strangulated Hernia, and have recovered without any urgent symptoms.

The author then adduced arguments to prove, that the chance of wounding the intestine was not diminished by the performance of Petit's operation, and objected strongly to the plan adopted by Mr. Luke, of scarifying, in certain cases, the thickened neck of the sac at different places, without penetrating its entire thickness. The modification of Petit's operation, lately introduced by Mr. Gay, was described; and Mr. Hancock remarked, that the neck of the

sac must be reached, whether the structure be got at directly or in front, or on the inner side; the only difference being, that in the one case the surgeon can attain his end directly, in the other, only in a round-about manner and in the dark—a very objectionable mode, as the operator should always, if possible, see what he is doing. Neither can it be at all admitted, that there is more danger of wounding the intestine in opening the sac in the ordinary operation, than in forcing the blunt-pointed bistoire caché (although with the least possible amount of force) between the strangulated femoral Hernia and the pubic margin of the ring, at the very point where ulceration of the gut takes place, from the pressure exercised by the sharp edge of Gimbernat's ligament, as has been noticed by Chevalier, Breschet, and indeed by all surgeons of experience. The other objections to the usual operation, mentioned at the commencement of the paper, were next commented on, with a view to prove that they were not entitled to the large amount of consideration ordinarily bestowed upon them.

Adjournment. After a suitable valedictory address from the President, the Society adjourned till October.

October 6, 1849.

Francis Hird, Esq., President, in the Chair.

The President, on taking the Chair, stated that the Council, in compliance with the known wish of many Fellows, had resolved to resume the meetings some weeks earlier in the season than had hitherto been usual. The great mortality from Cholera, and the questions excited in the profession by the progress and manifestations of the pestilence, would, he believed, form abundant matter for interesting and improving discussion; and he hoped that, in all the circumstances, the Fellows would approve of what the Council had done in thus early convening the Westminster Medical Society. The President then adverted to the great prosperity and popularity of the Society, and remarked that, in his experience of London scientific institutions, it was without a parallel. The overflowing audience which he addressed, and the rapid accession of new Fellows during last session, were particularly noticed.

[During the evening, three new Fellows were elected; and seventeen petitions for admission were read from the Chair.]

Health of London during the Six Months terminating 29th of September, 1849; more especially in reference to Cholera. By John Webster, M.D., F.R.S. [This communication appears in this Number; vide p. 992.]

Mr. Harding said that no case of Cholera had occurred at St. Pancras Workhouse, although that establishment contained fourteen hundred persons. The supply of water was from an Artesian well.

Dr. Cormack said, that, considering the limited time which remained before the hour arrived at which the meeting must break up, and believing that other Fellows might desire to comment on Dr. Webster's essay, he should confine his observations to a very few of the topics which he had noted as subjects suggestive of discussion. He must, however, in the first place, remark, that the profession was much indebted to Dr. Webster for the highly practical analysis which he had given of the vital statistics of London during the last six months.

Notwithstanding the appalling mortuary details which had been laid before the Society, the general inference to be adduced from all the facts was this—*that Cholera was a disease pre-eminently under the control of a well-directed system of preventive medicine and sanitary police.* Be it granted that the pestilence has travelled to us from the far East, and that, in addition to Dr. Webster's four causes—viz. 1, atmospheric, 2, local, 3, constitutional, and 4, exciting, there must be added, as an essential, the existence of a specific atmospheric

constitution, or, as some would have it, a specific poison; yet we find, that when it does reach our shores, it can hardly find any victims except amid the vapours of grave-yards, cesspools, and open sewers, or in the neighbourhood of swamps and rivers. It appears, then, that though a pervading epidemic influence may be necessary, yet the atmospheric causes, which are of real practical importance as regards the prevention of the disease, are of a comparatively limited and local nature, and partake of the character of those miasmata which give rise to pernicious fevers. These, when only endemic, may assume the intermittent type; but every few years they assume the graver form of remittent or continued fever. Miasmata, then, seem to be all-potent in the generation of Cholera, as well as of the diseases already alluded to. Many years ago, Moscati found that air collected during the night from the insalubrious rice-fields in the north of Italy was heavier than other air; and that, when it was condensed, it showed albuminous flocculi, of cadaverous smell. Analogous observations have been made by many others in different parts of the fever districts of Italy; and is it not possible that the living organisms observed at Bristol by Drs. Brittan and Swayne (or others of a similar nature), might have been found by the Italian physicians, had they used sufficiently powerful microscopes, and had they been acquainted with the characters of microscopic fungi? It is not necessary, however, to make out the existence of microscopic fungi, or conferva, in districts where Cholera and intermittent fever prevail, to establish the pathological relation of the two. The history of past epidemics, as well as the facts at the present moment under observation, alike testify to this great truth. Comparetti, of Padua, in 1765, described Cholera, such as has prevailed during the last month in London, under the name of *febbre perniciosa collerica sincopale*. Torti, of Modena, and Raimond Restaurant, describe the same disease; and, in 1680, the latter physician treated choleraic intermittent fever by cinchona. Laudanum and cinchona were the medicines in which Comparetti trusted. These physicians speak of the severity of the disease being so great, that the patients sank in the cold stage of the first paroxysm. Was not this Cholera such as has been desolating London? Dr. William Currie, of Philadelphia, speaks of "Cholera with regular periods like a tertian." Such views are identical with those more recently, and so clearly and philosophically developed, by Dr. James Bird, Dr. Charles Bell, and others.

The remittent and intermittent type of Cholera, Dr. Cormack remarked, can be best seen when the disease is studied in families, and in a district, from house to house; all cases, both slight and serious, being equally valuable in supplying the full natural history of the malady. From observations of this kind, Dr. Cormack was firmly impressed with the conviction, that Cholera was a remittent or intermittent fever; that the recoveries from the cold or collapse stage were to be attributed, not to the therapeutic action of medicines administered, so much as to the inherent or essential character of the disease; or, in other words, that the collapse of Cholera, and the cold stage of a simple ague, had alike a tendency to end in reaction. In both cases, provided the functions of life were not at a complete stand still, some good might arise from the application of heat to the surface, the careful administration of certain stimuli, which act rather on the capillaries than the heart—such as camphor—the restraint of the serous exudation from the intestines by means of acetate of lead enemata, (except so far as its moderate continuance may be necessary to relieve the hazardous congestion of internal organs during the cold stage,) and, above all, the modification of the character of the fever by means of quinine. In addition to the clinical and other facts already mentioned, certain experiments of Magendie might be cited. That physiologist injected a small quantity of putrid water into the veins of dogs; and he states, that among the intestines there was found an exhalation of a matter, in colour resembling the water in

which meat has been washed, and which adhered to the mucous coat of the intestine. This he regarded, not as an intestinal secretion, but as a part of the blood itself. As such, Dr. Cormack regarded the "rice-water" stools and vomit in Cholera; they were really and truly hæmorrhagic phenomena, and required to be so treated. To allow them to proceed unchecked, under the idea that morbid matter was being eliminated, was a fatal error, which it only required calm observation, and a little practical contact with the disease to dissipate. In moderation, they were often useful by relieving congestion; but in the extent which to they usually occurred, when uncontrolled, they soon rendered the patient anæmic, and the blood which they did leave was so inspissated as to be unable to circulate in the small vessels. Dr. Cormack concluded by stating, that while in each case, the special symptoms might require special modifications of treatment, *the key-stone to the successful management of the disease was this,—to bear in mind that Cholera was a fever, and that the serous purging was an exhausting hæmorrhage, which left, also, the residual blood in an unavailable condition.*

Mr. Streeter would state a fact connected with the cryptogamic theory. In the urine, first secreted after a recovery from collapse, and withdrawn by catheter from the bladder of a lady by himself, Mr. Quekett, on microscopical examination, detected and had made a drawing of what he then termed "curious organic bodies". This occurred before Dr. F. Brittan had exhibited to Mr. Quekett his specimens derived from vomit, dejection, and atmosphere, for verification of their cryptogamic nature. This fact clearly showed that these entophytes really existed; and, if introduced into the system by the alimentary canal, had actually traversed the circulating blood. He understood from the medical journals, that they had also been observed in the perspiration.

Dr. Lankester regarded the fact just stated as an interesting one; and he would test the theory advanced regarding fungi by this, and by the circumstance of the same bodies being found in the air, and the excretions of Cholera patients by Dr. Brittan. The conclusion that these fungi were the cause of Cholera was a very hasty one. It was proving too much, in showing that bodies of the same character were found in the urine. How did they get into the bladder? Surely not by being passed into the stomach, absorbed into the circulation, and passing into the kidney; yet this must be the case, if the theory advanced by Dr. Brittan were correct, for it was impossible to conceive that they passed up the urethra. Then, if these supposed fungi were really the cause of Cholera, how did you explain the suddenness of the attack in some cases of this disease? It was true that confervoid bodies were occasionally found in the body, as proved by Drs. Williams and Cowdell; but how was it, that the bodies described by Dr. Brittan were only occasionally found? His own (Dr. Lankester's) suspicion was, that these bodies really consisted of changed epithelial cells. Mr. Busk had examined the evacuations of Cholera patients carefully, and had never been able to find any definite bodies in them. Taking this, though merely negative evidence, he thought it sufficient to show that the bodies in question were not what some supposed them to be.

Dr. Cormack, in reference to the fact mentioned by Mr. Streeter, stated, that in the urine of a Cholera patient whom he had attended along with Dr. A. Henry, the latter had detected microscopic fungi, having some resemblance to the *torula cerevisiæ*, which had been shown to Mr. W. Bowman. The specimen of urine in which they were found was intensely coagulable, more than one-third of the liquid separating as a thick white sediment, when treated by heat and nitric acid. In this urine, were seen a large quantity of epithelial scales, numerous fragments of tube casts, and, in smaller quantity, the vegetables which had been submitted to Mr. Bowman. When the urine had been kept a day or two, the plants became much more numerous.

October 13, 1849.

Francis Hird, Esq., President, in the Chair.

Pathology and mode of Communication of Cholera. By John Snow, M.D. He had been led to consider Cholera as being, in the first instance at least, a local affection of the mucous membrane of the alimentary canal, and not an affection of the whole system, depending on a poison in the blood. In diseases caused by a special poison absorbed into the blood, general illness of a febrile character preceded any local symptoms which might arise ; but this was not the case in Cholera. The loss of the watery part of the blood, in all the cases he had seen, was sufficient to account for the collapse and all the general symptoms ; and when Cholera commenced gradually, it could often be checked, and prevented from proceeding beyond the stage of diarrhœa, by remedies adapted to act merely on the mucous membrane. The recent discovery of peculiar microscopic cells, believed to be of a vegetable character, in the Cholera discharges, tended to confirm this view. The history of Cholera, as an epidemic, showed that it was communicable by human intercourse ; and although there were many facts opposed to the theory of Cholera being contagious, in the same way that the eruptive fevers were believed to be, yet, in the sequel, these facts would afford the strongest evidence of the communication of the disease. If the alimentary canal were the seat of Cholera, and the disease were communicable, it was clear that it must be conveyed by something which passed from the mucous membrane of the stomach and intestines of one patient to that of another, which it could only do by being swallowed ; and as the disease grows in a community by what it feeds upon, attacking a few people in a town first, and then becoming more prevalent, the Cholera poison must multiply itself by a kind of growth, like every other morbid poison. The instances in which minute quantities of the ejections and dejections of Cholera patients must be swallowed, were sufficiently numerous to account for the spread of the disease. The bed-linen nearly always became wetted by the Cholera evacuations, which were almost without colour and odour ; and the hands of persons waiting on the patient became soiled without their noticing it ; consequently, unless they were very cleanly in their habits, and also had opportunity for washing their hands, they would be liable to swallow some of the excretion, and leave portions on the food they handled or prepared, which had to be eaten by the rest of the family, who, amongst the working classes, had to eat their meals generally in the sick room ; hence the thousands of instances in which, in this class of the population, a case of Cholera in one member of the family was followed by other cases ; whilst medical men and others who merely visited the patient, without taking food, generally escaped. The mining population of this country had suffered more from Cholera than any other ; there were no privies in the mines, and as the workmen usually stayed down for eight hours at a time, they took food with them, which they ate with unwashed hands ; hence, in the event of one workman getting the Cholera, the others were very liable to contract the disease, and take it to their families. One important medium of the conveyance of the Cholera poison from one patient to another was the drinking-water, when it became contaminated by the evacuations, either by their permeating the ground and getting into wells, or by their being conveyed by sewers into a river. Since he (Dr. Snow) first published his views on this point, Dr. William Budd had found the microscopic bodies, before alluded to, in such drinking-water of Cholera districts as received the contents of sewers. Dr. Snow then related a number of instances where, as in Albion-terrace, Wandsworth-road, there was a very high mortality from Cholera, in connexion with the contamination of the water with discharges from the patients. He attributed the high mortality on the south side of the Thames to three causes : 1st, the drinking from certain tidal ditches, which is common in Rotherhithe and Bermondsey ; 2nd, the water supplied by the water-

works in this part of London is generally procured from the Thames in the midst of sewers; and 3rd, to the contamination of a number of the wells by the contents of the cesspools, which are often as deep as the wells.

The low elevation of the ground had no connexion with Cholera, except when combined with infected water. Westminster had the same elevation as the Borough; and yet the mortality from Cholera was not half so great. Bethlem Hospital and the Queen's Prison had all but escaped Cholera; they are situated in a low level, but have pure water. The Brixton district was chiefly on elevated ground, and yet the mortality there had been high, as a great part of the district was supplied with water got out of the Thames near the Hungerford Suspension Bridge, by the Lambeth Waterworks. In Exeter, in 1832, the greater part of the people were supplied with water, into which, as he had learnt from Dr. Shapter, one of the chief sewers emptied itself. This sewer brought the sewage from the street in which two of the first cases of Cholera introduced from Plymouth occurred; the disease was in a few days scattered through the town, and was very fatal. Since that time, Exeter had been copiously supplied with water quite free from the sewage of the town, and this year there have been but few cases of Cholera, and those chiefly of strangers just arrived from places in which it was prevailing. Hull had also got a new and more plentiful supply of water since 1832, at which time it was scantily supplied with water conveyed from some springs. The new supply was from the river Hull, which receives half the sewage of the town, and which is washed up by the tide past the waterworks, as he had learnt from Dr. Horner. In 1832, Cholera in Hull was confined to the poor, of whom it carried off 300; this year it had assailed all classes, and about six times that number had died, although eight or ten thousand people had left the town to escape from the disease. Certain towns, as Birmingham, Bath, Cheltenham, and Leicester, had almost escaped Cholera both in 1832 and the present year. These towns were supplied with water quite uncontaminated by the sewers. Dr. Brittan had found microscopic bodies in the atmosphere, which he considered to be the same as those existing in the alimentary canal. Others had not succeeded in finding them in the air. If they should be generally found in the atmosphere, even of infected districts, they could not, he thought, be the real cause of Cholera; for all the evidence he had collected was opposed to the idea that the cause of Cholera existed in the air.

Dr. Swayne (of Bristol), agreed with Dr. Snow as to the probability of Cholera being primarily a disease of the alimentary canal, and not of the blood. The rapidity with which, when in an incipient stage, it may be arrested by appropriate treatment, would seem to show this; and the fact also, that certain cells of a very peculiar character had been detected, whilst undergoing their various stages of development, in the alimentary canal, would appear to strengthen such a belief.

These bodies, which he would now describe, were first observed by Dr. Brittan and himself whilst engaged as members of a sub-committee of the Bristol Medico-Chirurgical Society, in a microscopical investigation of the evacuations of Cholera. They had examined specimens from nearly sixty patients, and had failed to detect the bodies in question in only five or six cases. These, it is true, were unusually severe cases, but this did not, he thought, invalidate their conclusions, for it had been possible to obtain only one evacuation before death; and it had happened in other cases, where these bodies had been found in abundance in subsequent evacuations, that they were wanting in the first motion. The peculiar bodies alluded to were usually found in the matters rejected from the stomach and upper part of the alimentary canal to be very small, and in an early stage of development, and much resembling those which had been subsequently detected by Dr. Brittan in the atmosphere. In the discharges from the lower portions of the intestinal tube, they were much larger and more fully developed, although occasionally the smaller cells were also met with in considerable abundance.

Most of the larger cells thus observed were broken and fissured in certain parts of their circumference, and flattened, as if either from rupture or exosmosis of their fluid and contents; so that it was uncommon to meet with such cells in a perfect condition. However, he had lately had an opportunity of observing cells of this kind in a very perfect state, and of tracing in the same specimen the gradations from this to the imperfect form. [Dr. Swayne showed a diagram exhibiting their peculiar structure.] Their walls appeared to be thick, and studded externally with buds, some of which could be seen to be partially, and others to be completely detached from the parent cell. The cells contained within them a mass of granular matter, which did not always completely fill its cavity, but sometimes left a space around it, which appeared to be occupied by a transparent fluid. When crushed by pressure, these cells gave exit to a number of granules and very minute cells, resembling the smallest-sized cells detected in the atmosphere.

Dr. Swayne then alluded to a circumstance which had been noticed to him by one of the district surgeons in Bristol, and which his own experience had confirmed—viz. *the frequency with which the disease attacked washerwomen and others who had had much to do with the discharges of Cholera patients.* Dr. Carpenter had mentioned to him that he had been informed by an American friend that, at Philadelphia, the proportion of washerwomen among the Cholera patients was so great as strongly to attract attention.

Dr. Willshire could not agree with Drs. Swayne and Snow, that Cholera was at first a merely local disease, and that it was occasionally arrested by the use of chalk mixture, etc. Often did we see Cholera patients in a state of collapse, and half dead before the "local" affection of the alimentary canal presented itself; the remedies in question were then of no use whatever; was it to be said, that those cases of diarrhœa, which chalk mixture, etc., cure, were really cases of Cholera? Did not, on the contrary, the treatment usually found most successful in Cholera—the saline treatment of Stevens—militate against the opinion of the local nature of the disease? He did not regard the condition of the water in certain localities as the cause of Cholera; if it were, why had we been free from the disease since 1832, since which time the cause in question had existed. The water bore a mere contingent relation to the disease, nothing more.

Dr. Copland considered Cholera to be not merely a local disease, but an affection of the whole system, directing its chief violence to the alimentary canal. We all know the influence of foul water in producing diarrhœa and dysentery. Sir James Macgregor had referred the dysentery occurring at the siege of Badajoz, to the burial of 20,000 bodies. Dr. Copland thought that if such water were examined microscopically, we should find bodies similar to those described by Dr. Swayne. As to the wells of London, they have been contaminated for centuries; hence the water can only be considered as a *predisposing* and a *determining* cause of Cholera. He was greatly interested in the discovery of the microscopic bodies. He had long been of opinion that the decomposing effluvia given off in infectious diseases might take on special organized forms peculiar to each disease, and had recommended this subject to the notice of histologists some years ago.

Dr. Stewart alluded to an experiment performed by some French physicians, at Warsaw, in 1831, of swallowing some portion of the Cholera stools; and said, that as that was followed by no ill effects, it was opposed to the opinion of Dr. Snow. He considered, also, that Dr. Snow's hypothesis did not account for certain great and sudden outbreaks of Cholera that happened in India, nor the rapidity with which the disease spread in 1832. The Reports on Cholera in Glasgow, lately published in the *Edinburgh Medical and Surgical Journal*, clearly show that the susceptibility of the individual bears no ratio to the exposure to the disease. He though the opinion well established, that the contagiousness of Cholera has a very limited effect in producing its spread.

October 20, 1849.

Francis Hird, Esq., President, in the Chair.

On the Muscular Contractions which occasionally happen after Death from Cholera. By W. F. Barlow, Esq. Mr. Barlow first detailed two striking cases in which these movements occurred after death, and lasted a considerable time. The muscles of the arms, chest, and legs, and, in one case, of the face, were observed to be affected, some muscles being much more influenced than others. Some of the movements were not unlike those of volition. In one of the cases, the motions ensued two minutes after death; in the other, a quarter of an hour. In both, the muscles of the lower extremities were first affected, and the movements appeared successively in those of other parts. Two cases, presenting very similar features, occurred long ago, in India. There were local and transient forms of the affection which were more commonly observed; the movements might be confined to the legs, the chest, the face, to a single muscle, or even to certain fibres of it. A case of Cholera was on record in which paralytic muscles had been affected by spasms. These *post-mortem* contractions had been stated, by an observer, to admit of excitement and aggravation by "pricking." The writer had endeavoured, in one instance well calculated for experiment, to repeat the observation, but had been unsuccessful. However, this was only a single experiment, which he desired might be rated at its proper value. He had used, also, water of the heat of 150°, and of a yet higher temperature, in order to discover if the motions could be either induced or affected by it; no definite result could be obtained. These motions had caused terror to ignorant persons, and to persons not ignorant; they had also given rise to unfounded notions of persons being buried alive. Mr. Barlow had no explanation to offer of the cause or causes of these curious phenomena. For the present, they must be viewed as facts. He concluded by proposing a careful inquiry into all the circumstances under which they occurred. Amongst other things, it was important to note their duration, and the most protracted interval which might elapse between death and their commencement.

Adjourned Discussion on Cholera. Dr. Sibson hoped that one master-mind would eventually grapple with the entire subject, and throw some light on the very difficult questions connected with the nature and origin of Cholera. The primary cause of the disease still remained as mysterious as ever. He looked on the subject with despair. We found it at Moscow and at St. Petersburg during the intense cold season, whilst at Paris it raged during the hot months—and then, each vaunted his own unfailing remedy.

As to its origin and propagation by water, how could we explain by this cause the appearance of the disease in every part of England in one week? Was Dr. Snow's poisoned water sent in buckets over the empire? The epidemic has rapidly abated; but there has been no improved supply of water It was clear, from these facts alone, that water was not the chief means of communication. He did not agree with Dr. Snow, that the primary seat of the disease was in the mucous membrane of the intestines, for often the complaint set in with the greatest intensity without any intermediate stage of diarrhœa; and, on the contrary, diarrhœa of a very depressive character might exist, and yet no Cholera supervene. It had been proved, however, by the researches of Dr. O'Shaughnessy and Dr. Garrod, that if the blood were not primarily affected, it became so in the course of the disease; for it had been shown that the blood contained matters which ought to have been thrown off by the secretions; and thus, coincident with reaction, there was often a state of toxæmia. That the blood was so affected was also evidenced by the effects of the injection of salines into the circulation when the patient was in a state of collapse. In his own experience (in the Edinburgh Cholera hospital in 1832, under the late Dr. Macintosh,) this proceeding had always

succeeded in rallying the patient, who died, however, eventually, if the secretion of urine was not restored, but lived when the means of carrying off the poison and effete matters returned.

With respect to Mr. Barlow's very interesting paper, he would remind the Society, that muscular contractions after death were not confined to patients who had sunk from Cholera. Dr. Blake had found that, when he injected bismuth into the circulation, the muscles continued to contract after death; and Sir B. C. Brodie having carried on artificial respiration in a decapitated dog, it continued to tumble about for an hour and a half after its head was off. He had produced the same results also by injecting tobacco into the veins. The irritability of the muscles remained after the death of the brain and nervous system; and, in cases of Cholera, manifested itself in the lower extremities first, as they were the furthest from the nervous centres; and, as the nervous force diminished upwards, so the irritability developed itself towards the great nervous centres. In cases where poisons acted at once on the nervous system, more irritability of the muscles remained, than when death was slower in its process.

Dr. Lankester said, that the arguments of Dr. Snow had not convinced him. No "Cholera poison" had yet been demonstrated to exist; and the only approach to it was the announcement of the presence of fungi in the evacuations and vomited matters of Cholera patients, described by Dr. Swayne at the last meeting. These bodies might be divided into two classes—the definite, and indefinite. The latter consisted of all the bodies found in the air and the water, which were probably organic substances of various kinds, and of the smaller bodies from the evacuations and the vomited matters of Cholera patients, measuring from the 1-1000th to the 1-10,000th of an inch in diameter, and which consisted of various organic and inorganic matters. The definite bodies were such as those exhibited by Dr. Swayne at the last meeting of the Society; they were probably from the 1-300th to the 1-1000th of an inch in diameter. Amongst these bodies, Mr. Busk had succeeded in making out three forms. First, there were spores of a species of uredo (*uredo frumenti*)—a fungus which produced smut in corn, and was often found in bread. These bodies only appeared in Dr. Swayne's illustrations. Secondly, portions of vegetable membrane, of a dark colour, which resembled the membranous portions of a grain of wheat, and which were seldom absent from the finest flour, but were very abundant in the coarser kinds. Under a high magnifying power and deficient light, these bodies resembled the last. The third form of these bodies resembled starch granules. The two last bodies were evidently not independent organisms. He had examined Mr. Busk's preparations, and compared them with those of Dr. Brittan and Dr. Swayne; and he felt convinced of the correctness of Mr. Busk's inference, that no new organism had yet been demonstrated to exist in connection with Cholera. All the bodies that had been observed by the microscope, were evidently introduced by the food, or were the natural products of the mucous membrane.

Dr. King referred to a statistical inquiry in which he is now engaged, regarding some of the disputed points in the pathology of Cholera. He regarded the diarrhœa not as a stage of this disease, but as a predisposing cause. He also spoke of the relation which Cholera bore to dysentery. In the present epidemic he had observed "rice-water" evacuations, also dysenteric, and what he had named "*the raspberry jam motion*"—as it could only be compared to thin raspberry-jam. Patients who passed stools of this description, had, in his experience, invariably died.

Dr. James Bird said, that though ready to admit the affection of the intestinal mucous membrane to be prominently influential in the development of Cholera, yet he was of opinion, from a careful analysis of successive phenomena, that this was only a secondary and progressive effect of the lost vitality of the blood, and of that congestion which followed in the pulmonary

and cutaneous capillaries. He had that evening listened to lucid statements as to the extreme fatality of the disease, and the difficulty of investigating its nature and origin; but he was not one of those who, with Dr. Sibson, "despaired" of seeing a more definite and successful system of treatment introduced—provided the profession, instead of expecting to find specifics for a complicated malady, which admits of none, would zealously seek after pathological facts. In this way, we might hope to ascertain, by induction, the laws which govern the phenomena of Cholera, as well as the principles of a better therapeutic system.

As to the propagation of Cholera, whatever might be its origin, he had good grounds for thinking, with Dr. Lankester, that the disease was occasionally communicable from person to person, under certain conditions; and though he was not prepared to deny altogether the truth of Dr. Snow's views, that it could be multiplied through the medium of water, impregnated with the poisonous dejections of Cholera patients, he could not believe that such medium of communication had more than a partial effect. He had now witnessed the endemic and epidemic outbreaks of this disease, in India, for a period of thirty years; and had come to the conclusion, that while endemic influences of low, damp situations, vegetable and animal effluvia, bad water, imperfect ventilation, and deficient food, acted as predisposing causes in giving rise to this intractable malady among the people, an epidemic atmospheric constitution was necessary for its general diffusion. The atmosphere is the principal medium by which Cholera is disseminated, though the human recipient of the morbific miasm occasionally becomes, as in yellow fever and influenza, a secondary agent in propagating it. That it was so propagated sometimes, even in India, he had every reason to believe. When Cholera was prevailing at Tannah, in 1818, the soldiers of a confined, ill-ventilated barrack-room in the garrison were attacked by it, in succession, as they lay alongside of each other on their beds; and here infection seemed to act a subordinate part in the diffusion of an epidemic disease, not primarily infectious. Such, too, seems the nature of infectious yellow fever, arising out of the endemico-epidemic fever of malarious countries, as that of Sierra Leone, where, as shown by Dr. Bryson's convincing evidence, the infectious fever which prevailed, at different times, on board her Majesty's ships *Bann*, *Eden*, and *Eclair*, grew out of, as it were, the common endemic of the country. Cholera, moreover, in India, is admitted, on all hands, to attach itself to masses of the people assembled at the great religious festivals of that country, and to be disseminated, by them, among persons previously free from it. In the extensive district of deep black alluvial ground, called the Southern Mahratta country, Cholera, in 1841 and 1842, so invariably attacked the Madras regiments marching through it, that it came to be considered endemic there. It appeared to creep from village to village, and was carried, by bodies of religious pilgrims, from district to district; yet, in the face of such strong characteristics of infectious disease, some have endeavoured to explain away the evidence by supposing that a specific poison, the essential cause of Cholera, can lie dormant everywhere, till accessory causes give it activity; but when not propagated by human contact, there is no satisfactory evidence to prove that this disease has any other source than a malarious and epidemic origin. He would only make one more remark on the subject of the disease becoming transmissible, under favourable conditions, from the sick to the healthy—namely, that having observed how Cholera continued prevalent among the men and followers of native regiments attacked by it on their march, and allowed, immediately after arrival at a new station, to occupy the regimental lines of native mud huts, he recommended, to the general commanding the division, that all such infected regiments should be encamped in some dry and healthy locality, outside the cantonment, till all traces of the disease had disappeared, after which they were allowed to occupy the regimental huts. This precaution was followed by the happiest results; for,

after its adoption, the men and followers of regiments which had suffered from Cholera on the march, were altogether exempt from it in the lines. A combination of conditions may be necessary for the development of infectious Cholera; but that it is frequently self-multiplying in the human body, is in accordance with fact.

[Ten o'clock—the regular hour for the Society rising—having arrived, some conversation arose as to the propriety of adjourning the discussion, those who advocated that proposition laying stress on the fact, that the treatment of the disease had not been discussed. The President remarked, that the Fellows had properly confined their remarks to the topics more immediately suggested by the papers which had been read. It was then moved and seconded that the discussion on Cholera be resumed at next meeting of the Society; and, as an amendment, it was also moved and seconded that the time for discussion be prolonged for half an hour, to afford Drs. Webster and Snow an opportunity of reply. The amendment was carried by a small majority. The President then announced that, at next meeting, Professor Murphy would read a communication upon the use of *Anæsthetic Agents in Obstetric Practice.*]

Dr. Webster, in reply to questions which had been put to him during the discussion, stated that the water in Bridewell (as also at the House of Correction) was supplied by the New River Company. Diarrhœa had certainly prevailed, both in Bridewell and Bethlem Hospital, during the epidemic, but not extensively. The complaint had been generally very easily checked by a house medicine, originally prescribed by Sir George Tuthill, a former physician to these establishments. It was a draught, for which the following is the formula:—℞. Tinct. opii, m. x; tinct. rhei co., ʒ iii; sp. am. arom., ʒss; aq. menth. pip., ʒ i. M. Other remedies had very seldom been required.

With regard to the observations which Dr. Swayne had submitted to the Society, he thought, when he heard them, that they were very far from establishing the cryptogamic origin of Cholera. The particular organisms had not been shown to be invariably present in the rice-water evacuations; and then, had they been constantly found, it would be necessary, before proceeding to any more remote conclusion, to prove that they were truly the cause, and neither the consequence of the epidemic, nor simply owning with it a common origin. However, Mr. Busk had upset all the Bristol speculations, by correcting the facts upon which they had been reared.

Bad water was undoubtedly very favourable to the spread of the recent epidemic; but, with all respect to Dr. Snow, Dr. Webster could not but regard his water theory as far too exclusive. Dr. Webster referred to a variety of facts, which, he thought, were sufficient to show that water was not the only medium by which the Cholera poison had been communicated. He deprecated all such exclusive views of the epidemic.

Intramural interments were, in Dr. Webster's opinion, the occasion of much disease and death. Looking to the future, the danger seemed terrible; and if the present practices continue, London may again become a "city of the plague." If intramural burials go on at the present rate,—viz., about 45,000 per annum,—in fifty years, the enormous number of 2,250,000 additional dead bodies will have been deposited amid the dwellings of the living. Dr. Webster referred to various facts, tending to confirm the opinions expressed in his paper. He concluded by saying, that we must not take a circumscribed or merely *microscopic* view of the recent epidemic, but rather a telescopic range of the subject, in all its vastness.

Dr. Snow said, that the speakers who had made objections to his opinions, had taken an incomplete view of his theory, and had not remembered it in its entirety. He considered that the Cholera poison, which he believed to be contained in the evacuations, was swallowed in two ways; first, with the

food, owing to the persons waiting on the sick getting their hands soiled by the wet linen and bedding; and secondly, in the drinking water, when the contents of drains and sewers find their way into it. He would illustrate these two varieties in the mode of communication of the malady, by alluding to the first cases of Cholera which occurred in London, in the autumn of last year. John Harnold, a seaman just arrived from Hamburgh, where the Cholera was prevailing, was taken ill and died in Horsleydown, close to the Thames; within a week afterwards, a man who came to lodge in the same room was taken ill with the disease, but recovered. This second patient had probably swallowed a minute portion of the evacuations with his food. The ejections and dejections of both of these patients would, of course, go into the river; and within twenty-four hours of the latter one, there was a case of Cholera in Lower Fore-street, Lambeth, where the people obtain their water by dipping a pail into the river. This case was followed in three or four days by others in the same house. About the same time that the first case occurred in Lambeth, there was a case in White Hart-court, Duke-street, Chelsea; where the people had no water, but what they obtained directly from the river. This case became a fresh focus, from which the disease spread in the family and to the neighbours. The next case, after the first of those in Chelsea, was in Harp-alley, Farringdon-street. Now he, Dr. Snow, had seen the people of this alley fetch their drinking water from St. Bride's pump, which had lately been closed at the suggestion of Mr. Hutchinson, Surgeon, Farringdon-street, because the well was found to be contaminated by the contents of a sewer communicating with the Fleet-ditch, up which the tide flows from the Thames. The next cases happened in ships on the river; and the only cases, amongst those occurring at the time to which he was alluding, which could not yet be traced either to communication through the water, or to immediate personal intercourse by which the Cholera poison might be taken with the food, were the two first of a set of cases occurring in Spitalfields. With respect to the alleged swallowing of the Cholera evacuations by the Commissioners at Warsaw in 1831, it might be observed, that there was reason to believe that the Cholera poison was frequently destroyed in the stomach; for every circumstance which diminished the powers of digestion, such as anxiety, fear, and excesses in eating and drinking, was observed during an epidemic to render persons more liable to an attack.

October 27.

Francis Hird, Esq., President, in the Chair.

On the Use of Anæsthetic Agents in Obstetric Practice. By Professor Murphy. The author gave an elaborate and lucid account of his experience of chloroform in difficult and natural labour. He had not seen any bad consequences result from its use; though he had no doubt that so powerful an agent might, from one of those inexplicable idiosyncrasies which are occasionally met with, produce mischief in one out of a thousand cases; just as we see a grain of blue pill sometimes occasion hazardous salivation. He had not seen any cases of death, or hæmorrhage in consequence of its use. With reference to the obscene spectacles to which it was alleged that chloroform, when administered during labour, was apt to give rise, nothing of the kind had occurred in his practice, although his patients talked incoherently when under the influence of the drug. He called upon gentlemen to weigh each fact for themselves, and to test them by their own experience, not allowing themselves to be influenced in any way by *ex parte* statements.

Mr. I. B. Brown believed, that when labour went on languidly, a moderate dose of chloroform was far more efficient than *secale cornutum* in producing uterine action. At the same time, the full influence of chloroform retarded labour; and might even, so long as it lasted, induce paralysis of the uterus. He had never seen any indelicate behaviour in patients when under its influence.

Dr. Tyler Smith stated, that he had recently been performing some experiments, to illustrate another point in physiology, but which he thought had an interesting bearing on the subject under discussion. He found that the peristaltic action of the intestines and uterus continued in Guinea pigs who were under the complete anæsthetic influence of chloroform. This peristaltic action continued, even after the spinal marrow was crushed or removed. He therefore thought, that although those uterine contractions, which depended on reflex spinal action, might be affected by the modern practice of anæsthesia in labour, yet the peristaltic expulsive action would not be interfered with : and that these contractions were of no mean importance, was evident from the fact, that paraplegic women,—nay, that even dead women,—had given birth to children.

Dr. Snow concurred with Drs. Murphy and Brown, in saying that he had never seen any immoral manifestations in patients under the influence of chloroform. He had administered the chloroform to a number of Dr. Murphy's patients, as well as to others ; and his impression was, that the inhalation retarded labour—at least to some extent, because he noticed, that uterine contractions came on, most commonly, just as the effects of the vapour were so far exhausted, as to suggest the propriety of repeating the dose.

Dr. Henry Bennet rose—but the President stated that, as the time was nearly exhausted, the proper course would be to move an adjournment of the discussion till next meeting : and this having been done, was carried unanimously.

Hypertrophy of the Condyles of the Femur, and Disease of the Cartilages of the Knee-joint. Mr. Henry Smith showed a knee-joint, which he had removed. The amputation was performed close to the joint, a large flap being formed of the muscles of the calf of the leg. This operation was, Mr. S. stated, one in favour with Mr. Fergusson, and was very much the method which Mr. Syme had proposed. The enlargement of the inner condyle had existed for six years, and had crippled the patient. The disease of the joint, (causing separation of the cartilages), only came on (as the result of an injury) within the last few months, and it was principally for it, that the limb had been removed.

MISCELLANEOUS INTELLIGENCE.

The Cholera in London and the Provinces ceases to be daily reported, the number of cases being very small. It may be said to have disappeared, in the mean time, from the metropolis. The official report for Saturday, the 27th October, was for London and its vicinity, *no return* :—Scotland, *no return* :—England and Wales, forty-nine cases of Cholera, and twenty-one of Diarrhœa.

Supply of Water to the Metropolis. A feeling has become universal that a better supply of water must be obtained for London, and various projects have in consequence been propounded. The matter is one which Government ought to take up, and private speculation should not be allowed to complicate the measures needed for insuring an abundance of pure water to rich and poor. The Thames ought no longer to be the great sewer, receiving every twenty-four hours no less than thirty millions of gallons of sewage filth, from London and the river-side suburbs of Wandsworth, Putney, Fulham, Barnes, Mortlake, and adjacent villages.

Report of the Cholera Committee of the College of Physicians, on the Discoveries of Drs. Swayne and Brittan. We stop the press to announce the appearance of this document in the *Times* of 29th October. The Committee believe, that the bodies found and described by the above-named gentlemen, are not the cause of Cholera, and have no exclusive connection with that disease.

APPOINTMENTS.

Alcock, Dr. Benjamin, appointed Professor of Anatomy in Queen's College, Cork, in room of Dr. Carte, who has resigned in consequence of ill health.

Bentley, Robert, Esq., F.R.S., appointed Professor of Botany to the Pharmaceutical Society of Great Britain, in the room of the late Dr. A. T. Thomson.

Curling, T. B., Esq., appointed Surgeon to the London Hospital, in the room of the late J. G. Andrews, Esq.

Day, George E., M.D., appointed Chandos Professor of Medicine in the University of St. Andrew's, in the room of the late Dr. John Reid. The other candidates were Drs. G. Paterson, Redfern, Harvey, and R. M. Glover.

Fergusson, William, Esq., F.R.S., appointed Surgeon in Ordinary to his Royal Highness Prince Albert, in the room of C. A. Key, Esq., deceased.

Lewis, Dr. D., elected one of the Physicians to Royal General Dispensary, Aldersgate-street.

Lurdo, Dr., appointed Physician to the Bath General Hospital, in the room of the late Dr. Tarleton.

Purnell, J. J., Esq., appointed Surgeon to the Royal General Dispensary, Aldersgate-street, in the room of Samuel Solley, Esq., resigned.

Wordsworth, J. C., Esq., appointed Assistant Surgeon to the London Hospital, in the room of T. B. Curling, Esq, who has succeeded Mr. Andrews.

OBITUARY.

Appleton, J., M.D., late of Greenwich, at Madras, of dysentery, on 26th July.

Curtis, William, Esq., Surgeon, at Alton, Hants, aged 29, on 13th October.

Edwards, James, M.D., late of Canterbury, and formerly of Putney, at North-end Cottage, Fulham, aged 69, on 1st October.

Ferries, James Cranford, M.D., at his residence, 5, Carlton Terrace, Brixton, Surrey, aged 41, on 3rd October.

Golding, Ray Charles, M.D., aged 25, on 16th October.

Higgins, Robert, Esq., Surgeon, at Newport, Salop, aged 77, on 14th September.

Nicol, John, M.D., at Inverness, of Cholera, aged 61, on 26th September. Dr. Nicol was one of the most respected and influential inhabitants of Inverness.

Proctor, Samuel, M.D., at 7, Norland Place, Notting Hill, aged 64, on 15th October.

Tipple, Edwin, Esq., Surgeon, late of Mitcham, Surrey, at Park Terrace, Park Road, aged 65, on 20th October.

Tweeddale, James, M.D., Royal Navy, at Adelaide, South Australia, on 24th May.

Walsh, James Wellington, M.D., at Kerescotty, King's County, of brain fever, on 13th Sept.

Warren, J. Taylor, Esq., Inspector of Military Hospitals, at Brighton, aged 78, on 6th Oct.

Weatherhead, John Rose, Esq., Surgeon, at Wisbeach, on 8th September.

Wells, Henry, Esq., of Warwick-street, Pimlico, in his heroic attempt to rescue some persons who had been suffocated in a foul sewer.

Williams, Allen, M.D., at Eastbourne, Sussex, aged 32, on 29th September.

Williams, John, Esq., Surgeon, at Salford, lately.

Wright, John, M.D., at 3, Storey's Gate, St. James's Park, aged 44, on 17th October.

BOOKS RECEIVED.

American Medical Ethics. Oxford: 1849. Annual Report of Progress of Chemistry, Part II. London: 1849. Bird (Dr. Golding) on Electricity and Galvanism. London: 1849. Bird (Dr. G. G.) on Cholera. Swansea: 1849. Budd (Dr. W.) on Cholera. 1849. Ellis's Demonstrations of Anatomy (concluding Part). London: 1849. Grove on Sulphur in Cholera. London: 1849. Murray (Sir James), Electricity as a Cause of Cholera. Dublin: 1849. Percival's Medical Ethics, 3rd Edition. Oxford: 1849.

NOTICE TO CORRESPONDENTS.

In the next Number, the space required for the Index, and the arrears in the Bibliographical Record and Digest, may oblige us to delay till January several Original Articles destined to appear in this volume. Gentlemen who have intimated their wish to contribute to the volume for 1850, are requested to communicate the subjects of their memoirs as soon as possible.